Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendments to Parts 1, 2, 87 and 101	)	
of the Commission's Rules	)	WT Docket No. 99-327
To License Fixed Services	)	
at 24 GHz	)	

REPORT AND ORDER

Adopted: July 25, 2000 **Released:** August 1, 2000

By the Commission: Commissioner Ness issuing a statement; Commissioners Furchgott-Roth and Tristani concurring and issuing separate statements.

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I. INTRODUCTION

1. By this *Report and Order* we adopt service rules for licensing the 24.25-24.45 GHz and 25.05-25.25 GHz bands (24 GHz band[1]). We adopt, in part, service rules proposed in the *Notice of Proposed Rulemaking* (*NPRM*)[2] to govern the licensing and operation of the 24 GHz band. We also adopt, in part, competitive bidding rules proposed in the *NPRM* to select among new licensees for this band. In this *Report and Order*, we amend Parts 1, 2, 87 and 101 of the Commission's Rules to promote effective use of the 24 GHz band and to accommodate deployment of point-to-point, point-to-multipoint, and multipoint-to-multipoint fixed wireless technology at 24 GHz. The rule changes we adopt today establish a flexible regulatory and licensing framework. Our decision today will enhance opportunities to provide a broadband wireless service, foster effective competition, and further our efforts for consistent rule application regarding broadband wireless services.

II. EXECUTIVE SUMMARY

2. In this *Report and Order* we make the following major determinations regarding the 24 GHz band.

- We assign the 24 GHz band for licensing throughout the United States by Economic Areas (EAs) (constituting 172 service areas). We also authorize additional areas for licensing covering the following United States territories and possessions: Guam, Northern Mariana Islands, Puerto Rico, the United States Virgin Islands, American Samoa and the Gulf of Mexico.

- We permit 24 GHz band licensees to offer a variety of fixed services, however, we decline to allocate mobile operations for the 24 GHz band at this time.

- 24 GHz licensees, including incumbent Digital Electronic Message Service (DEMS) licensees, will be governed by Part 101 of the Commission's Rules as discussed herein.

- We license the 24 GHz band in 40 MHz flexible channel pairs. In addition, we provide 24 GHz band licensees more flexibility in system design, by designating that either the upper or lower side of the 40 MHz channel pairs can be used for the nodal station or the subscriber station.

- We permit open eligibility for 24 GHz band licensees.

- We adopt our proposed framework for license terms for 24 GHz band licensees. Licensees will have a ten-year license term from the date of grant. Licensees must demonstrate that they are providing substantial service when they file their renewal application.

- We allow 24 GHz band licensees to partition and/or disaggregate their licenses. We also allow licensees to aggregate 24 GHz band spectrum.

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[1] We note, as an initial matter, that DEMS licensees who have been relocated to the 24 GHz band will be considered incumbents in the 24 GHz band and will be governed by the rules we adopt herein, unless otherwise indicated.

[2] *See* Amendment to Parts 1, 2, and 101 of the Commission's Rules To License Fixed Services at 24 GHz, WT Docket 99-327, *Notice of Proposed Rulemaking*, 14 FCC Rcd 19263 (1999) (*NPRM*).

- We adopt technical standards that are both consistent with our Part 101 rules and provide licensees increased flexibility in system design, including but not limited to, an emission mask for the 24 GHz band; allowing the use of non-directional antennas as well as one-foot diameter parabolic antennas; eliminating individual licensing for nodal stations; and allowing a maximum contiguous bandwidth of up to 200 MHz through aggregation.

- The general competitive b lding rules set forth in Part 1, Subpart Q, of the Commission's Rules apply to the 24 GHz band, unless otherwise provided herein.

- We adopt a three-tiered approach to small business bidding credits. Very small businesses with average annual gross revenues not exceeding $3 million are eligible to receive a 35 percent bidding credit; small businesses with average annual gross revenues not exceeding $15 million are eligible to receive a 25 percent bidding credit; and entrepreneurs with average annual gross revenues not exceeding $40 million are eligible to receive a 15 percent bidding credit.

III. BACKGROUND

3. In 1983, the Commission adopted rules for the Digital Electronic Message Service (DEMS). DEMS systems are common carrier point-to-multipoint microwave networks designed to communicate information between a fixed (nodal) station and a number of fixed user terminals.[3] This service was intended to accommodate operation of high-speed, two-way, point-to-multipoint terrestrial microwave transmission systems.[4] Initially, DEMS was allocated spectrum in the 18.36-18.46 GHz bands coupled with the 18.94-19.04 GHz band. Subsequently, the Commission amended the initial DEMS allocation and designated spectrum in the 18.82-18.92 GHz and 19.16-19.26 GHz bands for DEMS.[5] The Commission began granting DEMS licenses in the early 1980's; however, due to several factors, including the high cost of equipment, the service was not deployed widely. In the early 1990s, a small number of companies, including Associated Communications, L.L.C., Digital Services Corporation, Microwave Services, Inc., and Firstmark Communications, Inc., began acquiring licenses in approximately thirty of the Nation's largest markets.[6]

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[3] *See* Amendment of Parts 2, 21, 74 and 94 of the Commission's Rules to Allocate Spectrum at 18 GHz for, and to Establish other Rules and Policies Pertaining to, the Use of Radio in Digital Termination Systems and in Point-to-Point Microwave Radio Systems for the Provision of Digital Electronic Message Services, and for other Common Carrier, Private Radio, and Broadcast Auxiliary Services; and to Establish Rules and Policies for the Private Radio Use of Digital Termination Systems at 10.6 GHz, 54 Rad. Reg. 2d 1091 (1983).

[4] *See id.*

[5] *See* Amendment of Parts 2, 21, 74 and 94 of the Commission's Rules to Allocate Spectrum at 18 GHz for, and to Establish other Rules and Policies Pertaining to, the Use of Radio in Digital Termination Systems and in Point-to-Point Microwave Radio Systems for the Provision of Digital Electronic Message Services, and for other Common Carrier, Private Radio, and Broadcast Auxiliary Services; and to Establish Rules and Policies for the Private Radio Use of Digital Termination Systems at 10.6 GHz, 56 Rad. Reg. 2d 1171 (1984).

[6] *See* Amendment of the Commission's Rules to Relocate the Digital Electronic Message Service From the 18 GHz to the 24 GHz Band and to Allocate the 24 GHz Band for Fixed Service, ET Docket No. 97-99, *Memorandum Opinion and Order*, 13 FCC Rcd 15147, 15149 ¶ 6 (1998) (*DEMS MO&O*).

4. On March 14, 1997, the Commission adopted a *Reallocation Order* requiring the relocation of DEMS operations from the 18 GHz band to the 24 GHz band.[7] These actions were taken in an effort to protect two government earth stations, alleviate sharing issues between 18 GHz non-government satellite services (NGSO) and DEMS licensees, and to ensure the viability of DEMS.[8] In order to protect the government earth stations, the incumbent DEMS licensees in the Washington, D.C. and Denver, Colorado areas were required to immediately cease operations in the 18 GHz band. In all other areas, incumbent DEMS were directed to discontinue operations in the 18 GHz band no later than January 1, 2001.[9] The Commission concluded that the 400 MHz in the 24 GHz band was sufficient to meet the spectrum needs of the DEMS licensees.[10] In order to accommodate this relocation, the Commission, in the *Reallocation Order* amended the Table of Frequency Allocations and Part 101 of the Commission's Rules regarding Fixed Microwave Service to permit fixed service use of the 24 GHz band.[11] On June 25, 1997, the Wireless Telecommunications Bureau (Bureau) issued a *Modification Order* modifying existing DEMS licenses to provide for operation in the 24 GHz band.[12]

5. On November 10, 1999, we released a *Notice of Proposed Rulemaking* (*NPRM*) proposing licensing and service rules to govern both incumbents and new licensees in the 24 GHz band.[13] Therein, we proposed to auction new licenses in the 24 GHz band and to apply the Part 101 service rules, as modified to reflect the particular characteristics and circumstances of the band, to both these new licensees and to the relocated incumbents.[14] We also proposed to apply competitive bidding procedures under the Part 1 competitive bidding rules for future licensing in this band.[15] We sought comment on whether to adopt rules providing for a Broadcasting Satellite Service (BSS) in the 24 GHz band, while proposing to remove and/or reallocate certain non-government radionavigation services. Additionally, we sought comment on whether to expand the array of services offered in the 24 GHz band to include mobile operations, rather than exclusively fixed service.

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[7] The *Reallocation Order* provides a complete background of the events preceeding the DEMS relocation from 18 GHz band to the 24 GHz band. *See* Amendment of the Commission's Rules to Relocate the Digital Electronic Message Service from the 18 GHz Band to the 24 GHz Band and To Allocate the 24 GHz Band For Fixed Service, *Order*, 12 FCC Rcd 3471-3475 ¶¶ 2-10 (1997) (*Reallocation Order*).

[8] *Id.*

[9] *Id.* at 3475-76 ¶¶ 11, 14. The Commission reasoned that it was necessary to relocate the entire DEMS service, as opposed to only those licensees in the Washington D.C. and Denver regions, because of the unlikelihood that separate 24 GHz equipment would be manufactured solely for the Washington and Denver markets. Thus, the Commission explained that bifurcating the DEMS licensees would in effect preclude these two markets from receiving DEMS service. *DEMS MO&O*, 13 FCC Rcd at 15152-53 ¶ 12.

[10] *See Reallocation Order*, 12 FCC Rcd at 3475 ¶ 11; *see also DEMS MO&O*, 13 FCC Rcd at 15153 ¶ 13.

[11] *Reallocation Order*, 12 FCC Rcd 3471.

[12] Amendment of the Commission's Rules to Relocate the Digital Electronic Message Service from the 18 GHz Band to the 24 GHz Band and To Allocate the 24 GHz Band For Fixed Service, *Order*, 12 FCC Rcd 8266 (1997).

[13] *NPRM*, 14 FCC Rcd at 19263.

[14] *Id.* at 19265 ¶ 1.

[15] *Id.*

IV. DISCUSSION

A. Licensing Plan for 24 GHz Services

1. Table of Allocations

6. *Background.* In the *Reallocation Order*, we adopted fixed service as the only authorized use under the Table of Frequency Allocations.[16] In keeping with this allocation, we proposed to permit 24 GHz band licensees to use the spectrum for any fixed service.[17] Generally, we proposed service rules that would enable licensees to offer a wide variety of services and minimize regulatory burdens. In that vein, in the *NPRM*, we raised questions concerning the possibility of expanding the array of services offered in the 24 GHz band to include mobile operations.[18]

7. *Discussion.* As a general matter, commenters in this proceeding strongly support our goal of providing licensees maximum flexibility in the use and design of their systems in the 24 GHz band.[19] Teligent, for instance, agrees that our proposal to adopt rules promoting flexibility provides a proper framework to encourage local competition and the growth and development of innovative services.[20] Several commenters, however, while still desirous of flexibility with regard to the provision of fixed services, urge us not to allow mobile operations, but rather to retain primary status for fixed services in the 24 GHz band.[21] These commenters concur with our statement concerning the current lack of equipment for mobile use and point out that no demonstration has been made that mobile operations would be compatible with fixed operations.[22] Moreover, our recent decision to allocate 200 MHz of spectrum at 25.05-25.25 for BSS feeder links adds another layer of complexity to the coordination process.[23] Several of the commenters suggest that we authorize mobile services on a secondary basis[24] or limit the use of mobile operations to the 24 GHz band fixed licensees so that they can "introduce mobile options, when feasible, within the frequency parameters of their existing licenses."[25] We agree with the majority of commenters that it is premature to consider mobile operations for this service, and therefore, we will not allocate for mobile operations in the 24 GHz band at this time. Nevertheless, we concur with Teligent that, since equipment for mobile operations may become available in the future, we should not completely preclude the possibility of mobile operations in the 24 GHz band.[26] Thus, while we conclude that the 24 GHz band will remain a fixed service at this time, we reserve the discretion to revisit permitting mobile operations if we are presented with technical information demonstrating that such

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[16] *Reallocation Order*, 12 FCC Rcd at 3475 ¶ 13.

[17] *NPRM* at 19267-67 ¶ 6, 19271-72 ¶¶ 13-15.

[18] *Id.* at 19267 ¶ 6.

[19] *See, e.g.*, Teligent Comments at 5; Wireless One Comments at 1.

[20] Teligent Comments at 5.

[21] Wireless One Comments at 1; PCIA Comments at 4-5; FWCC Comments at 2-3.

[22] FWCC Comments at 3; PCIA Comments at 4.

[23] *See infra* ¶ 8.

[24] FWCC Comments at 3; Wireless One Comments at 1.

[25] PCIA Comments at 5.

[26] Teligent Comments at 7.

operations are technically feasible (*e.g.*, concerns regarding possible harmful interference to 24 GHz band fixed operations and BSS are addressed).[27]

8. Sharing Criteria for Satellite Services and Terrestrial Fixed Services. *Background.* We recently amended the Table of Frequency Allocations to allocate spectrum for BSS use, effective April 1, 2007.[28] In the *18 GHz Report and Order*, we allocated spectrum in the downlink band at 17.3-17.7 GHz for primary BSS use.[29] In the uplink band, we allocated 300 MHz of spectrum at 24.75-25.05 GHz for primary Fixed Satellite Service (FSS) Earth-to-space use, limited to feeder links for the BSS allocation in the 17.3-17.7 GHz band, and in addition, we allocated 200 MHz of spectrum at 25.05-25.25 GHz for co-primary sharing between FSS and the 24 GHz Service, requiring coordination between these services.[30] In the *NPRM* in this proceeding, we tentatively concluded, because the corresponding downlink BSS allocation is not immediately effective, to defer the implementation of a sharing methodology between the satellite interests and the terrestrial fixed service interests. Nevertheless, we solicited comment on the interaction between these two services.[31]

9. *Discussion.* In light of the fact that the downlink BSS allocation in the 17.3-17.7 GHz band will not become effective until April 1, 2007,[32] we continue to believe that it would be premature to implement sharing criteria at this time. Teligent, PCIA, and FWCC agree that it is too early for the Commission to implement a sharing criteria, because of the seven-year delay before BSS can effectively use the 24 GHz band.[33] In the alternative, DIRECTV contends that, because the preparation of technical rules and international coordination agreements will take several years to finalize, it is not too early to begin developing the necessary rules to support BSS operations in the 24 GHz band.[34]

10. We agree with Teligent that it would be premature to undertake a precise set of rules for sharing, in that the potential parameters of such a satellite system are also unknown.[35] Therefore,

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[27] We note that the Commission has permitted the provision of additional operations in existing services when it determined that it was in the public interest to do so. *See, e.g.*, Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-Way Transmission, MM Docket No. 97-217, *Report and Order*, 13 FCC Rcd 19112 (1998); Amendment of the Commission's Rules to Permit Flexible Service Offerings in the Commercial Mobile Radio Services, WT Docket No. 96-6, *First Report and Order and Further Notice of Proposed Rulemaking*, 11 FCC Rcd 8965 (1996); Amendment of Part 95 of the Commission's Rules to Allow Interactive Video and Data Service Licensees to Provide Mobile Service to Subscribers, WT Docket No. 95-47, *Report and Order*, 11 FCC Rcd 6610 (1996) (*IVDS Report and Order*).

[28] *See* Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite-Service Use, *Report and Order*, FCC 00-212 (rel. June 22, 2000) (*18 GHz Report and Order*).

[29] *Id.* at ¶¶ 96-99.

[30] *Id.*

[31] *NPRM*, 14 FCC Rcd 19268-69 ¶ 7.

[32] *See 18 GHz Report & Order* at ¶¶ 96-99.

[33] PCIA Comments at 5; FWCC Comments at 3; Teligent Comments at 9.

[34] DIRECTV Comments at 4.

[35] Teligent Comments at 9.

consistent with the *18 GHz Report and Order*, we will consider any sharing criteria in a future rulemaking proceeding.[36] In this context, Teligent suggests that a formal working group composed of fixed wireless operators and satellite representatives should convene near the 2007 benchmark date to develop sharing criteria and the necessary separation distance for non-ubiquitous BSS uplink earth stations.[37] We agree that industry consensus can be helpful for developing any sharing criteria and separation distances, and although we are not requiring that a working group be established at this time, we encourage industry representatives to engage in ongoing collaboration prior to the April 1, 2007 milestone. With seven years prior to any potential BSS allocation becoming effective in the 25.05-25.25 GHz band, we are not adopting sharing criteria between the co-primary fixed service licensees and satellite operators in the 24 GHz band at this time because we believe that there will be sufficient opportunity to develop appropriate sharing methodologies. In the interim, we encourage negotiations between parties regarding terms and conditions, consistent with our 24 GHz band rules, to allow a satellite operator to provide an uplink earth station service within a licensee's license area (such as through partitioning, disaggregation or a leasing arrangement). We further note that satellite operators could choose to pursue use of the 24 GHz band for BSS feeder links through a license won at the upcoming auction (thereby becoming a wireless licensee).[38] It is contemplated that, because this spectrum will be used in the U.S. by BSS operators for feeder links, the satellite operators will provide predominantly domestic service.

11. Non-Government Radionavigation Service. In the *NPRM*, we proposed to delete the non-Government radionavigation service allocations in the 24.25-24.45 GHz and 25.05-25.25 GHz bands.[39] We also proposed to modify the Table of Frequency Allocations to reflect the FAA's decommissioning of a radar facility at the Newark, New Jersey International Airport.[40] We note that footnote US341, addressing the Newark radar facility, has already been removed from the Table of Allocations pursuant to a proceeding by the Office of Engineering and Technology (OET).[41] Finally, we proposed to amend Section 87.173(b) of our Rules to change the entry for aeronautical radionavigation from 24.25-25.25 GHz to 24.75-25.05 GHz.[42] We received no comments related to these proposals. Therefore, for the reasons underlying our proposals regarding Aeronautical Radionavigation Service operations in 24.25-25.25 GHz and 24.75-25.05 GHz, we adopt them as final rules.

2. Geographic Area Licensing

12. *Background.* In the *NPRM*, we requested comment on the type of service area that should be used to license the 24 GHz band. The Commission originally used Standard Metropolitan Statistical Areas (SMSA) to license the DEMS service.[43] However, SMSAs did not include rural

[36] *18 GHz Report and Order* at ¶ 98.

[37] Teligent Comments at 10.

[38] Note that a provider of satellite services using BSS feeder links at 25.05-25.25 must also obtain a Part 25 license, which could be sought after an amendment of the Part 25 service rules or upon a waiver of those rules.

[39] *NPRM*, 14 FCC Rcd at 19269 ¶ 8.

[40] *Id.*

[41] Amendment of Part 2 of the Commission's Rules to Make Non-Substantive Revisions to the Table of Frequency Allocations, *Memorandum Opinion and Order*, 15 FCC Rcd 3459, 3477 ¶ 45 (1999).

[42] *Id.*

[43] *See NPRM*, 14 FCC Rcd at 19270 ¶ 9.

communities, and thus DEMS licensees were unable to provide service to these communities. Therefore, we tentatively concluded to license the 24 GHz band on the basis of 172 EAs with additional EA-like areas, covering United States territories and possessions. We indicated our belief that the use of EAs, in conjunction with the proposed partitioning and disaggregation rules, would create reasonable opportunities for the dissemination of 24 GHz band licenses among a large number of entities.[44] While we concluded that the EA licensing scheme would best serve the public interest in facilitating efficient use of this spectrum, we nonetheless solicited comment on alternative geographic areas.[45]

13. *Discussion.* Although we received a mixed reaction to our EA licensing approach, we have concluded that EAs are the best basis for geographic area licensing in the 24 GHz band. Teligent and Wireless One agree with our decision to use EAs to license 24 GHz.[46] In this regard, Teligent states that the relatively small size of an EA should minimize the burden of performance requirements and thereby encourage rapid and intensive use of the spectrum.[47]

14. Several commenters, however, oppose an EA licensing approach.[48] PCIA, RTG and SBA argue that the large size of EAs precludes small entities and start-up companies from participating at auction.[49] SBA indicates that the use of EAs discourages small business participation by allowing the high value of urban areas to influence the bidding for the less valuable rural areas included within the EA.[50] These commenters argue that the adoption of even smaller license areas would reduce spectrum warehousing and speed service to rural areas,[51] and they offer a range of smaller alternative geographic areas.[52] We do not believe that service areas smaller than EAs would prove a beneficial licensing approach for the 24 GHz band.

15. We agree with Teligent that smaller alternative service areas are unlikely to permit the efficiencies necessary to justify the large cost of providing fixed wireless service.[53] Rather, we agree that EA based licenses are more likely to offer licensees the opportunity to realize the necessary economies of scale.[54] In the recently released *Narrowband PCS Second Report and Order*, we found that large service

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[44] *Id.*

[45] *NPRM* at 19269-70 ¶ 9.

[46] Teligent Comments at 10-14; Wireless One Comments at 2.

[47] Teligent Comments at 11.

[48] PCIA Comments at 5-11; SBA Comments at 1-4; RTG Comments 5-12; NTCA Reply at 1-4.

[49] PCIA Comments at 6-11, SBA Comments at 1-2, RTG Comments at 11-13.

[50] SBA Comments at 2.

[51] *See, e.g., id.*

[52] PCIA maintains that the Rand McNally copyright issues can be resolved and requests that we reconsider our earlier decision not to use Basic Trading Areas (BTAs). In the alternative PCIA suggests the possible use of the Commerce Department's Component Economic Areas (CEAs). PCIA Comments at 6-11. SBA and RTG prefer the use of Metropolitan Statistical Areas (MSAs) in conjunction with Rural Service Areas (RSAs). SBA Comments at 1-2, RTG Comments at 11-13.

[53] Teligent Comments at 12.

[54] *See id.*

areas are more appropriate, because they serve the needs of a wider range of entities, including both large and small service providers.[55] We believe that this finding is appropriately applied to the 24 GHz band. We do not believe that EAs are so large that they will preclude smaller businesses from participating at auction. Our recent experience with the 39 GHz auction, where EAs were used, indicates that small entities were able to successfully bid at auction.[56] Moreover, entities desiring larger service areas will be able to create such areas by aggregating licenses.[57] Finally, in response to PCIA's request that we reconsider BTAs, we note that issues surrounding Rand McNally's copyright interest in BTAs are not easily resolved and, therefore, rule out the use of BTAs for this service.[58]

16. Moreover, we have received comments regarding the necessity for parity within the broadband services.[59] Therefore, we believe that retaining the same service area as that used for the 39 GHz Service[60] would place both services on an equal footing. Also, we believe that the three-tiered approach to bidding credits we are adopting herein will ameliorate concerns regarding the inability of smaller entities to participate at auction and aid these smaller entities when seeking financial backing.[61]

17. Some commenters find our rationale that post-auction partitioning and disaggregation will open up opportunity to smaller entities to be faulty and argue that we should encourage small business participation at auction.[62] NTCA argues, for example, that rural telephone companies have not been successful in obtaining partitioned areas, because licensees are generally able to meet the Commission's performance requirements by serving the more urban areas, and therefore are able to hold onto the entire service area.[63] As stated above, we believe that flexible partitioning and disaggregation/aggregation fosters rapid delivery of service to rural areas and encourages the participation of smaller entities at auction, consistent with our mandate to ensure that licenses are disseminated among a wide array of applicants.[64] NTCA offers no concrete evidence, indicating otherwise. In fact, the benefits of post-auction partitioning and disaggregation are demonstrated in recent assignments of C

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[55] *See* Amendment of the Commission's Rules to Establish New Personal Communications Services, Narrowband PCS, GEN Docket No. 90-314, *Second Report and Order and Second Further Notice of Proposed Rulemaking*, FCC 00-159 (rel. May 18, 2000) (*Narrowband PCS Second Report and Order*).

[56] *See* 39 GHz Band Auction Closes Winning Bidders of 2,173 License Announced, *Public Notice*, DA 00-1035 (released May 10, 2000). Out of the twenty-two small and very small bidders who participated at auction eighteen were successful in winning licenses. *Id.*

[57] *Narrowband PCS Second Report and Order*, FCC 00-159 at ¶ 10.

[58] *See* Amendment of the Commission's Rules Regarding the 37.0-38.6 GHz and 38.6-40.0 GHz Bands, ET Docket No. 95-183, *Memorandum Opinion and Order*, 14 FCC Rcd 12428, 12452 at ¶ 46 (1999) (*39 GHz MO&O*).

[59] *See, e.g.*, PCIA Comments at 2; Teligent Comment at 5.

[60] The Commission used EAs to license the 39 GHz Service. *See 39 GHz MO&O*, 14 FCC Rcd at 12452-53 ¶ 46.

[61] *See infra* ¶¶ 77, 78.

[62] PCIA Comments at 7-8; SBA Comments at 2-3; NTCA Reply Comments at 2-3.

[63] NTCA Reply Comments at 3.

[64] 47 U.S.C. §§ 309(j)(3)(B), 309(j)(4)(C); *see* PCIA Comments at 7.

Block Broadband PCS licenses.[65] Moreover, entities such as rural telephone companies may form a bidding consortium in order to level the playing field at auction, and thereafter, partition or disaggregate to the consortium members in order to form a smaller service area.[66] Thus, we continue to believe that our flexible partitioning rules provide an effective mechanism/vehicle by which smaller or newly formed entities can gain access to the broadband wireless market.[67]

18. For these reasons, we determine that EAs constitute the most appropriate geographic area licensing for the 24 GHz band. EAs will provide ample population coverage and allow 24 GHz band licensees the flexibility to provide a multitude of service offerings. Thus, we determine to use a total of 176 service areas—the 172 EAs specified by the Department of Commerce and four EA-like areas for Guam and the Northern Mariana Islands, Puerto Rico and the United States Virgin Islands, American Samoa, and the Gulf of Mexico.

3. Spectrum Blocks

19. *Background.* In the *Reallocation Order*, the Commission determined that the differences in propagation, rain attenuation, and available equipment between the 18 GHz and 24 GHz bands would require DEMS systems in the 24 GHz band to use approximately four times as much bandwidth as DEMS systems operating at 18 GHz to maintain comparable reliability and coverage.[68] Therefore, we decided to license the relocated operations in 40 MHz channel pairs. We concluded that DEMS licensees require 40 MHz channel pairs at 24 GHz for their capacity to be equivalent to the capacity they had at 18 GHz.[69] Section 101.147(r)(9) of the Commission's Rules currently separates the frequencies between the transmit and receive and it establishes one set of channels for nodal station use (24.25-24.45 GHz) and another set for use as user stations (25.05-25.25 GHz).[70] We proposed that the same amount of spectrum be provided to each new 24 GHz licensee as is provided under the rules for the relocated licensees. We sought comment on these proposals.

20. *Discussion.* Commenters generally support the spectrum block proposal to retain five blocks of 40 MHz channel pairs, however, they seek additional flexibility to make more efficient use of the blocks.[71] In this regard, commenters seek the amendment of the channel designations in Section 101.147(r)(9) to eliminate the directional dictates of the spectrum pairs, and thereby, accommodate the

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[65] *See* Wireless Telecommunications Bureau Grants Consent to Assign C and F Block Broadband PCS and SMR Licenses (Application File Nos. 0000016887, 0000016892), *Public Notice*, DA 00-213 (rel. Feb. 8, 2000).

[66] 47 C.F.R. § 1.2105.

[67] *See, e.g.*, Geographic Partitioning and Spectrum Disaggregation by Commercial Mobile Radio Services Licensees and Implementation of Section 257 of the Communications Act - Elimination's of Market Barriers, WT Docket No.96-148, *Report and Order and Further Notice of Proposed Rulemaking*, 11 FCC Rcd 21831, 21843-44 ¶¶ 13-17 (1996) (*Partitioning and Disaggregation Report and Order*).

[68] *NPRM*, 14 FCC Rcd at 19273 ¶ 16.

[69] *Id.*

[70] 47 C.F.R. § 101.147(r)(9).

[71] FWCC Comments at 3-5; Wireless One Comments at 3-5; PCIA Comments at 11-13; Teligent Comments at 40-41; Ensemble Comments at 1-7.

use of time division duplex (TDD) technology.[72] TDD is a technical design for duplex communications whereby both upstream and downstream communications utilize the same RF channel by sharing it in the time domain.[73] One commenter includes among the benefits of TDD improved spectral efficiency and less expensive equipment.[74] In that vein, PCIA and FWCC also seek to amend Section 101.147(r)(9) to allow aggregation of channel blocks to create spectrum blocks larger than 40 MHz.[75]

21. One of the desired uses for the 24 GHz band is to provide high-speed data. In many situations the downstream (*i.e.*, from node-to-subscriber) data path needs to be larger than the upstream (*i.e.*, from subscriber-to-node) data path. For example, a licensee may want to use 60 MHz for the downstream data and only 20 MHz for the upstream data path. Thus, in order to allow licensees more flexibility, we will change the designation of the 40 MHz channel pairs to indicate that either the upper or lower side can be used for the nodal station or the subscriber station. In doing so, we will designate the 40 MHz channel pairs as before, but remove the requirement that the upper or lower side can be used for the nodal station or for the subscriber station. This will also allow all 80 MHz or any portion thereof to be used for one-way communications if so desired by the area licensee and allow 24 GHz band licensees the additional flexibility of fixed use for technologies such as TDD and applications like high speed Internet access. We note that allowing the channels to be used in this manner will change the emission mask standards by increasing the maximum bandwidth. This issue will be addressed in the technical rules section.[76]

4. Treatment of Incumbents

22. *Background.* As was discussed above, incumbent DEMS licensees are required to relocate their operations to the 24 GHz band by January 1, 2001. After the completion of this relocation, such licensees shall be governed by Part 101 of the Commission's Rules.[77] In the *NPRM*, we proposed to make the incumbent licensees subject to any changes we make in this proceeding to the Part 101 Rules. Accordingly, we sought comment on our tentative conclusion that no special rules for the protection of incumbents are necessary.[78]

23. *Discussion.* In general, commenters support the Commission's proposal that 24 GHz band operations be governed by Part 101. Wireless One states that it is essential that all licensees be subject to uniform licensing and service rules.[79] Accordingly, we conclude that all licensees in the 24 GHz band including incumbent licensees previously licensed under our DEMS rules, will be governed by Part 101 of the Commission's Rules, as discussed herein. Further, we are eliminating all reference to DEMS in our rules governing the operations in the 24 GHz band.

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[72] *Id.*

[73] Ensemble Comments at 4.

[74] *Id.* at 1, 4-7.

[75] PCIA Comments at 12-13; FWCC Comments 4-5.

[76] *See infra* ¶¶ 57, 58.

[77] *NPRM*, 14 FCC Rcd at 19271 ¶ 11.

[78] *Id.* at ¶ 12.

[79] Wireless One Comments at 2.

24. Teligent seeks reassurance that incumbent areas will be protected from harmful interference. In this regard, it requests clarification that incumbents licensed on a SMSA basis will retain exclusive right to their licensed channels within their service area and that the new 24 GHz band licensees will be required to protect the incumbents against harmful interference.[80] We clarify that we will exclude the SMSAs of authorized incumbent licensees from the applicable EAs offered at auction and that incumbents will retain exclusive rights to use those channels located within its SMSA. Furthermore, as stated in the *NPRM*, we believe that the protection requirements afforded by Section 101.509 of the Commission's Rules will allow the incumbent licensees and new licensees to effectively coordinate their systems to avoid harmful interference.[81] As we have done with other services, we note that should an incumbent lose its authority to operate, the incumbent's authorization will revert to the relevant EA licensee.[82] Thus, the EA license holder will be permitted to operate within the portion of the forfeited SMSA situated within its EA without being subject to competitive bidding.[83] We believe that this approach best serves the public interest by ensuring efficient use of spectrum and reassuring that any disruption in service will be remedied as expediently as possible.

B. Application, Licensing and Processing Rules

1. Regulatory Status

25. *Background.* In the *NPRM*, we sought comment on a proposed licensing framework, similar to that adopted for other broadband services,[84] wherein a license applicant may request common carrier status and/or non-common carrier status under a single authorization, rather than require the applicant to choose between these services.[85] We also proposed that if licensees change their service offering, such that it would alter their regulatory status, they must notify the Commission, although such a change would not require prior Commission authorization.[86]

26. *Discussion.* As stated above, commenters in this proceeding supported the proposition that 24 GHz band licensees be provided with maximum flexibility to offer a variety of services.[87] Our proposed licensing framework, intended to allow further market development, was met with support among the commenters.[88] Teligent noted that our proposal to allow applicants to request both common

[80] Teligent Comments at 13-14.

[81] 47 C.F.R. § 101.509.

[82] *See, e.g., 39 GHz Report & Order*, 12 FCC Rcd at 18637 ¶ 79; *MAS Report and Order*, FCC 99-415 at ¶ 70.

[83] *See, e.g., 39 GHz MO&O*, 12 FCC Rcd at 18637 ¶ 79.

[84] *See, e.g.*, Rulemaking to Amend Parts 1, 2, 21 and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, To Reallocate the 29.5-30.0 GHz Frequency Band, To Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, CC Docket 92-297, *Second Report and Order, Order on Reconsideration and Fifth Notice of Proposed Rulemaking*, 12 FCC Rcd 12545, 12642-45 ¶ 218-227 (1997) (*LMDS Second Report and Order*); *39 GHz Report and Order*, 12 FCC Rcd at 18636 ¶ 76.

[85] *See NPRM*, 14 FCC Rcd at 19274 ¶ 19.

[86] *Id.*

[87] *See supra* ¶ 7.

[88] PCIA Comments at 13; Teligent Comments at 18-19; Teligent Reply Comments at 2.

carrier and non-common carrier status in a single license provides the licensee with maximum flexibility and minimal regulatory burden.[89] Thus, similar to the approach taken towards regulatory status for both the LMDS and the 39 GHz band,[90] we adopt a broad licensing framework in order to encourage further market development by allowing 24 GHz licensees to provide a wide array of services without unwarranted regulatory restraint.

27. As we have stated in the past, it is within the licensee's discretion to determine the exact nature of the service to be provided under the regulatory classifications it selects.[91] By way of guidance for future applicants, we note that an election to provide service on a common carrier basis requires the elements of common carriage be present in the type of service the license applicant seeks to provide; otherwise, the service is categorized as non-common carriage. The 1996 Act provides that a telecommunications carrier shall be treated as a common carrier only to the extent that it is engaged in providing telecommunications services.[92] Telecommunications service is defined as the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available to the public, regardless of the facilities used.[93] As we indicated in the *NPRM*, we depend on the license applicant to notify the Commission of its intent to provide common carrier services, thereby enabling us to determine whether to apply the statutory requirements of Title II of the Communications Act.[94] We note that to the extent that a 24 GHz band licensee is a telecommunications carrier it will be governed by the duties required under Part 51, including interconnection with other telecommunications carriers.[95] Also to the extent that a 24 GHz band provider meets the definition of a local exchange carrier it will also be governed by the requirements set forth in Subpart C of Part 51 of our Rules.[96]

28. We also adopt our proposal requiring licensees to notify the Commission of a change in the service or services they offer, if such a change would result in a change of their regulatory status, although such change would not require prior Commission authorization.[97] Licensees must notify the Commission within thirty days of a change in regulatory status, unless the change results in the discontinuance, reduction, or impairment of the existing service, in which case a different time period may apply. In this instance, the licensee is governed by Section 101.305 of the Commission's Rules and

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[89] Teligent Comments at 18.

[90] *LMDS Second Report and Order*, 12 FCC Rcd 12545, 12642-45 ¶ 218-227; *39 GHz Report and Order*, 12 FCC Rcd at 18636 ¶ 76.

[91] *See, e.g., LMDS Second Report and Order*, 12 FCC Rcd at 12644 ¶ 223.

[92] 47 U.S.C. § 153(44).

[93] 47 U.S.C. § 153(46).

[94] *See NPRM*, 14 FCC Rcd at 19274 ¶ 18.

[95] 47 C.F.R. § 51.100.

[96] 47 C.F.R. §§ 51.201 - 51.223.

[97] *See* 1.947 (b) of the of the Commission's Rules, 47 C.F.R. § 1.947 (b). A change in regulatory status would require Commission prior authorization, however, if the change raised issues concerning the benchmark contained in Section 310(b)(4) of the Act. *See infra* n. 180.

must submit an application under Section 1.947 of the Commission's Rules in conformance with the deadlines established by Section 101.305.[98]

29. In addition, we adopt our proposal that 24 GHz band license applicants are not required to detail the specific services they seek to provide. As we stated in the *NPRM*, we believe it is sufficient that an applicant indicate its choice of regulatory status in the context of our streamlined application process.[99] We conclude that a 24 GHz band licensee will be able to provide all permissible services anywhere within the licensed geographic service area, consistent with its regulatory status.[100] Licensees are permitted to add remove, or relocate sites within their service area without prior Commission approval, unless requirements otherwise set forth in our rules would entail the filing of a separate authorization.[101] In this regard, we note that a licensee may be required to comply with separate filing or authorization requirements in modifying a station where: (1) there is a National Environmental Policy Act (NEPA) concern pursuant to Section 1.1301 through 1.1319; (2) areas where radio frequency quiet zones are in place under Section 1.924; (3) antenna structure requirements under Part 17 requires licensees to register with the Commission prior to construction; (4) any restrictions regarding border areas under international agreement;[102] and (5) any applicable technical rules in Part 101.[103]

2. Open Eligibility

30. *Background.* In the *NPRM*, we reiterated that our primary goal in this proceeding was to encourage efficient competition, particularly in the local exchange telephone market.[104] We tentatively concluded that, because of current market conditions in the 24 GHz band, it was unnecessary to impose an eligibility restriction on either incumbent local exchange carriers (ILECs) or incumbent cable operators.[105] However, we sought comment as to whether open eligibility would indeed pose a significant likelihood of competitive harm in specific markets, and if so, whether eligibility restrictions are an effective way to address that harm.[106]

31. *Discussion.* We received relatively few comments concerning our tentative conclusion not to impose eligibility restrictions on the participation of ILECs or incumbent cable operators. Those comments we did receive supported open eligibility, but did not specifically address the likelihood of competitive harm. For example, RTG "vigorously" supports this initial decision and states that open eligibility will foster competition and encourage innovation.[107] In addition, RTG contends that open

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[98] 47 C.F.R. §§ 1.947, 101.305.

[99] *NPRM*, 14 FCC Rcd at 19274 ¶ 19.

[100] *Id.*

[101] We note that this applies to incumbent licensees as well as to new 24 GHz band licensees.

[102] *See infra* ¶ 66 n. 216.

[103] *See* 47 C.F.R. §§ 1.1301-1319, 1.924, 17.4.

[104] *NPRM*, 14 FCC Rcd at 19275 ¶ 20.

[105] *Id.* at 19276-77 ¶¶ 21-22.

[106] This standard was adopted in the *39 GHz Report and Order*. *See 39 GHz Report and Order*, 12 FCC Rcd 18600, 18619 ¶ 32.

[107] RTG Comments at 13.

eligibility will aid in promoting the deployment of 24 GHz band service to rural areas "by broadening the number of potential providers."[108]

32. We believe that substantial competitive harm is unlikely to result from ILEC and incumbent cable eligibility in this service. The number of broadband present and anticipated competitors in the marketplace lessens the likelihood that ILECs and incumbent cable operators can thwart competition.[109] For instance, CLECs are providing competitive broadband services (*i.e.*, digital subscriber line (DSL)) either over their own facilities and/or through unbundled network elements (UNEs) obtained through the incumbent local exchange carrier (ILEC). Also, as noted in the *LMDS Third Report and Order*, CLEC and ILECS are increasing their use of DSL service, in turn cable modem providers are competing with the DSL offerings, and satellite companies are now providing one-way nationwide broadband service.[110] In addition, emerging broadband providers are likely to offer consumers even more choices.[111] Moreover a number of fixed wireless service providers are offering comparable services (i.e., 39 GHz, MMDS and LMDS). Therefore, the possibility that incumbents could foreclose the development of competition by acquiring licenses in the 24 GHz band is remote.

33. Finally, we note that no such restriction was placed on the 39 GHz band at its onset and the eligibility restriction placed on ILECs and incumbent cable operators in LMDS[112] sunset on June 30, 2000.[113] Moreover, we believe that there are several service specific distinctions between the 24 GHz band and LMDS, at its inception, that further substantiate our decision not to impose an eligibility restriction for the 24 GHz band. In the *LMDS Second Report and Order*, the Commission concluded that several factors increased the feasibility of anti-competitive preemption. First, the Commission concluded that, because of the unusually large spectrum offering (1150 MHz) and the service's potential to offer a variety of fixed services, an LMDS license would be of particular value to an incumbent both for the purpose of providing increased services and also to preserve excess profits that a competitor could erode.[114] The 24 GHz band, however, involves a smaller allocation of 400 MHz of non-contiguous bandwidth. Another factor that the Commission relied on in the LMDS proceeding was the offering of

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[108] *Id.*

[109] See the LMDS Third Report and Order for an extensive market analysis in relation to the LMDS eligibility restriction. Rulemaking to Amend Parts 1, 2, 21 and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5 -30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and For Fixed Satellite Services, CC Docket No. 92-297, *Third Report and Order and Memorandum Opinion and Order*, FCC 00-223 (rel. June 27, 2000) (*LMDS Third Report and Order*).

[110] *Id.* at ¶ 18.

[111] *Id.* In addition, we note that we are currently continuing our inquiry into broadband deployment. *See* Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, CC Docket No. 98-146, *Notice of Inquiry*, FCC 00-57 (rel. February 18, 2000).

[112] *See* 47 C.F.R. § 101.1003. Section 101.1003 prohibited ILECs and incumbent cable companies in LMDS from holding an attributable interest in a LMDS A Block license, where the LMDS geographic service area significantly overlaps the incumbents authorized or franchised service area.

[113] 47 C.F.R. § 101.1003(a)(1).

[114] *LMDS Second Report and Order*, 12 FCC Rcd at 12610 ¶ 149, 12617-19 ¶¶ 163-165, 12621 ¶ 170.

one large license for each mostly unencumbered geographic area.[115] However, in this instance, we will be offering five licenses each per geographic area.[116] Furthermore, in the 24 GHz band, unlike LMDS, there are broadband services currently being provided.

34. We received no comments providing information disputing our conclusion that the 24 GHz band spectrum may be inadequate for the provision of competitive multi-channel video programming distribution (MVPD).[117] We based this conclusion both on our own assessment and on the current services offered by Teligent, which are limited to voice and data.[118] Moreover, even if an MVPD offering were possible, we believe that the number of available licenses in each EA (five) would hinder any anti-competitive conduct by incumbent cable operators. Therefore, we continue to believe that it is unnecessary to adopt a restriction excluding the participation of incumbent cable companies in this service.

35. Finally, we note that Teligent has expressed concern regarding ILEC dominance in access to multi-tenant buildings and requests that we consider adopting safeguards to prevent ILEC dominance in the marketplace.[119] Specifically, Teligent requests that we prohibit "any telecommunications carrier . . . from entering into or maintaining a contract with a building owner or manager that provides for that carrier's exclusive access to a multi-tenant building."[120] We share Teligent's concern and are currently considering rooftop access issues in the *Competitive Networks* proceeding.[121] We believe that the *Competitive Networks* proceeding is the more appropriate proceeding in which to consider these issues. Moreover, as Teligent itself noted in the LMDS eligibility restriction proceeding, the acquisition of a license does not reduce or eliminate an ILECs' motivation or ability to restrict the multiple-unit rooftop access of competitors.[122] Thus, we adopt our proposal to allow open eligibility in the 24 GHz band.

3. Performance Requirements

36. *Background.* The Commission has, in other wireless services, imposed performance requirements to ensure that the spectrum is used effectively and that service is deployed rapidly. More recently, the Commission has employed a substantial service standard as a mechanism to foster rapid development of spectrum. In the *NPRM*, we solicited comment on whether a substantial service requirement or, in the alternative, a minimum coverage requirement is more appropriate for this band.[123]

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[115] LMDS provided two licenses per BTA. The A Block license is comprised of 1150 MHz of total bandwidth and the B Block license is comprised of 150 MHz of total bandwidth.

[116] *See Reallocation Order*, 12 FCC Rcd at 3471. *See also supra* ¶ 20.

[117] *NPRM*, 14 FCC Rcd at 19277 ¶ 22; *see also* Teligent Comments at 7, n.12. Teligent indicates that MVPD is not currently offered in the 24 GHz band.

[118] *NPRM*, 14 FCC Rcd at 19277 ¶ 22.

[119] Teligent Comments at 17-18.

[120] *Id.* at 19-24.

[121] Promotion of Competitive Networks in Local Telecommunications Markets, WT Docket No. 99-217, CC Docket No. 98-98, *Notice of Proposed Rulemaking and Notice of Inquiry*, FCC 99-141 (rel. July 9, 1999).

[122] Teligent Comments at 6 in *LMDS Third Report and Order* proceeding.

[123] *See NPRM*, 14 FCC Rcd at 19280-81 ¶ 32.

In this connection, we asked whether a safe harbor standard is warranted and requested comment on possible sanctions for licensees that fail to meet the performance requirements.[124]

37. *Discussion.* The majority of commenters preferred the application of a renewal expectancy based on the substantial service requirement, noting the flexibility that such a standard will offer licensees as they determine how best to implement business plans for the 24 GHz band.[125] However, RTG preferred a minimum coverage requirement to ensure the deployment of services in the 24 GHz band to rural areas if the Commission uses EA-based service areas for this band.[126] We disagree with RTG that strict minimum coverage requirements are necessary. In this regard, we note that some commenters believe that the suggested alternative minimum coverage requirements would be inconsistent with other fixed services.[127] In addition, PCIA asserts that imposition of a numerical minimum coverage requirement might adversely affect the financing opportunities for 24 GHz band applicants and licensees.[128] Based on the record in this proceeding, we believe that the substantial service standard, in lieu of specific coverage requirements, best serves the public interest. In addition to being consistent with the approach used in other wireless services, we believe that this standard is sufficiently flexible to foster expeditious development and deployment of systems and will ultimately create competition among the service providers in this band.

38. We define substantial service as "a service that is sound, favorable, and substantially above a level of mediocre service which might minimally warrant renewal."[129] As a result of the flexibility that this standard affords, we have, in past proceedings, provided safe harbor examples to provide guidance to licensees in meeting this requirement. Safe harbor examples for the a 24 GHz point-to-point/multipoint licensee may consist of a showing of four links per million population within a service area[130] or service to an area that has very limited access to either wireless or wireline telecommunications services. In order to determine whether a licensee has provided substantial service at the end of the license term, we will consider factors such as: i) whether the licensee's operations service niche markets or focus on serving populations outside of areas serviced by other licensees; ii) whether the licensee's operations serve populations with limited access to telecommunications services; and iii) a demonstration of service to a significant portion of the population or land area of the licensed area.[131] We emphasize that this list is not exhaustive and that the substantial service requirement can be met in other ways. Hence,

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[124] *See id.* at 19281 ¶¶ 33-34.

[125] FWCC Comments at 7; PCIA Comments at 16-18; Teligent Comments at 26-28.

[126] RTG Comments at 14-15.

[127] *See* FWCC Comments at 7; PCIA Comments at 17; Teligent Comments at 27.

[128] *See* PCIA Comments at 17-18.

[129] 47 C.F.R. § 22.940(a)(1)(i). *See also LMDS Second Report and Order*, 12 FCC Rcd 12545, 12660; Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service, GN Docket No. 96-228, Report and Order, 12 FCC Rcd 10785, 10843-10844 (1997) (*WCS Report and Order*); Amendment of Part 95 of the Commission's Rules to Provide Regulatory Flexibility in the 218-219 MHz Service, WT Docket No. 98-169, *Report and Order and Memorandum Opinion and Order*, 15 FCC Rcd 1497, 1537-38 (1999) (*218-219 MHz Service Report and Order*); *MAS Report and Order*, FCC No. 99-415 ¶ 94.

[130] *See 39 GHz Report and Order*, 12 FCC Rcd 18600, 18625 ¶ 46.

[131] *See LMDS Second Report and Order*, 12 FCC Rcd at 12660; *WCS Report and Order*, 12 FCC Rcd at 10843-44; *218-219 MHz Service Report and Order*, 15 FCC Rcd at 1538; *MAS Report and Order* at ¶ 95.

we will review licensees' showings on a case-by-case basis. If a licensee fails to meet the performance requirement, the subject license will not be renewed.

39. We note that several licenses currently held by incumbent licensees are scheduled to expire in 2001. Under the previous performance requirements, incumbent licensees were required to construct at least one link in their service area within eighteen months, without any further performance requirements imposed during their license term.[132] We recognize that the substantial service requirement we adopt herein differs somewhat from the previous performance requirement. We also note that these license terms are of a limited duration. Under these circumstances, we believe that we should incorporate the build-out showing into the showing required at renewal.[133] Accordingly, we determine that those incumbent 24 GHz band licensees who have met the build-out requirements of Section 101.63 by their 2001 renewal date will satisfy the substantial service requirement we have adopted herein. We believe that this approach furthers the public interest and affords incumbent licensees the opportunity to continue implementation of their existing business plans. This decision also allows us to remain consistent with our renewal requirements, as discussed below, ensuring efficient use of the spectrum, and expeditious service to the public.

4. License Term and Renewal Expectancy

40. *Background.* In the *NPRM*, we sought comment on the license term and renewal expectancy requirements for the 24 GHz band.[134] We indicated that a ten-year license term, combined with a renewal expectancy, would promote a stable regulatory environment that will encourage the development of this spectrum.[135] Thus, we proposed that the license terms for both incumbent and new 24 GHz band licensees be ten years, with a renewal expectancy based on a showing that the licensee is providing substantial service.[136] We also requested comment on possible alternatives to this proposal, such as whether a longer license term is warranted.[137] In addition, we proposed that the renewal application of a 24 GHz band licensee must, at a minimum, include specific showings in order to claim renewal expectancy.[138]

41. *Discussion.* Based on the record in this proceeding, we adopt a ten-year license term, in conjunction with a renewal expectancy based on substantial service.[139] Hence, a renewal applicant shall receive a preference or renewal expectancy if the applicant has provided substantial service during its previous license term and has complied with the Communications Act and Commission rules and

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[132] 47 C.F.R. § 101.63.

[133] *See e.g., 39 GHz Report and Order*, 12 FCC Rcd 18600, 18625 ¶ 47.

[134] *NPRM*, 14 FCC Rcd at 19279 ¶ 29.

[135] *Id.*

[136] *See supra* ¶¶ 37-38.

[137] *NPRM* at 19279 ¶ 29.

[138] *Id.* at 19280 ¶ 30.

[139] We note that incumbent licensees that currently have a license term of less than less than ten years will receive a ten-year term upon renewal.

policies. Generally, commenters supported this proposal.[140] For instance, Teligent indicated that a license term in excess of ten years may lead to spectrum warehousing because longer license terms provide the Commission with fewer opportunities to determine whether a licensee is providing substantial service.[141] In addition, FWCC and PCIA stressed the importance of adopting a license term and renewal expectancy that is consistent with other fixed wireless services.[142] We have made significant efforts to establish consistency and promote regulatory parity with respect to policies governing the wireless services.[143] In other contexts, we have recognized the advantages that a ten-year license term and renewal expectancy based on a substantial service requirement affords nascent providers and, thus, endorsed this approach.[144] Similarly, we believe that adopting a requirement that 24 GHz band licensees make a showing of substantial service at renewal in order to acquire an expectancy will further the public interest. In addition to ensuring regulatory consistency, this approach will promote the development of the 24 GHz band.

42. In order to claim a renewal expectancy, we will require the licensee to, at a minimum, provide the Commission with 1) a description of its current service in terms of geographic coverage and population served or links installed and a description of how the service complies with the substantial service requirement; and 2) copies of any Commission Orders finding the licensee to have violated the Communications Act or any Commission rule or policy, and a list of any pending proceedings that relate to any matter described by the requirements for the renewal expectancy. These requirements are in the public interest as these showings ensure that the licensee is using the spectrum efficiently to provide services to the public, has operated its facilities in compliance with the Commission's rules, and has the requisite qualifications to be a Commission licensee.

5. Application of Title II Requirements to Common Carriers

43. *Background.* We have taken various steps to foster competition among telecommunications service providers. We recognize that certain provisions of the Communications Act may not be as necessary or may prove to be more burdensome to a new entrant and that removing and/or reducing unnecessary regulation tends to encourage market entry and lower costs. In our effort to facilitate the entry of new operators into the various markets, we have exercised our authority under Sections 10 and 332(c)(1)(A) of the Communications Act to streamline and/or eliminate various Title II requirements for common carriers. For example, in the commercial mobile radio service (CMRS) proceeding, we utilized our forbearance authority for certain requirements involving the filing of tariffs and inter-carrier contracts and the maintenance of certain records.[145] In addition, we have applied our forbearance authority in permitting competitive access providers (CAPS) and competitive local exchange

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[140] *See, e.g.*, FWCC Comments at 7; PCIA Comments at 16-18; Teligent Comments at 26-28; Teligent Reply Comments at 10.

[141] Teligent Comments at 26.

[142] FWCC Comments at 7; PCIA Comments at 16. *See also supra* ¶ 36.

[143] *See, e.g., LMDS Second Report and Order* at 12545; *39 GHz MO&O*, 14 FCC Rcd 12428; *218-219 MHz Report and Order* at 1497.

[144] *See 39 GHz Report and Order*, 12 FCC Rcd 18600, 18623; *MAS Report and Order* at ¶ 95.

[145] *See* Implementation of Sections 3(n) and 332 of the Communications Act, Regulatory Treatment of Mobile Services, *Second Report and Order*, 9 FCC Rcd 1411, 1463-93 (1994) (*CMRS Second Report and Order*). The Commission determined to forbear sections 203, 204, 205, 211, 212, and most application of section 214. *Id.* at 1478-80.

carriers (CLECs) to file permissive tariffs.[146] We nonetheless note that there also have been instances where we specifically declined to forbear from enforcing certain provisions against either CLECS or CMRS providers.[147]

44. In the *NPRM*, we noted our forbearance authority pursuant to Section 10 of the Communications Act and considered the extent to which we should apply Title II requirements to common carriers in this context. Thus, we sought comment on whether we should forbear from enforcing any provisions of the Communications Act or the Commission's Rules on common carrier licensees in the 24 GHz band.[148]

45. *Discussion.* Although we solicited comment on the appropriate use of our forbearance authority with respect to the 24 GHz band, we received few comments regarding this matter. One commenter indicated that we should extend forbearance to all non-dominant carriers in the 24 GHz band regardless of the technology they employ to provide their services.[149] Two commenters stated that we should extend the maximum possible forbearance to 24 GHz band licensees and also initiate a proceeding that applies forbearance to all fixed wireless licensees regardless of the frequency band.[150] Only PCIA offered specific provisions for us to consider, suggesting that we immediately relieve all fixed wireless carriers from the same common carrier regulations as to which it has exercised forbearance with respect to CMRS carriers.[151] However, none of the commenters described how forbearance from any of the provisions is warranted pursuant to the provision of Section 10 of the Communications Act. Section 10 provides the Commission forbearance authority, if the Commission determines that 1) enforcement of the regulation and/or provision is not necessary to ensure that charges, practices, classifications, or regulations are reasonably fair; 2) enforcement is not necessary in order to protect consumers; and 3) forbearance is consistent with the public interest.[152]

46. PCIA expressed concern that selective application of forbearance to 24 GHz band licensees would threaten to provide one group of licensees with a regulatory advantage over other fixed licensees offering similar services and, thus urged us to adopt a uniform policy that relieves all fixed

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[146] *See* In the Matters of Hyperion Telecommunications, Inc. Petition Requesting Forbearance, Time Warner Communications Petition for Forbearance, Complete Detariffing for Competitive Access Providers and Competitive Exchange Carriers, *Memorandum Opinion and Order and Notice of Proposed Rule Making*, 12 FCC Rcd 8596 at 8608-10 ¶¶ 23-27.

[147] *See CMRS Second Report and Order* at 1478 (declining to forbear Sections 201 and 202 of the Communications Act); In the Matter of Personal Communications Industry Association's Broadband Personal Communications Services Alliance's Petition for Forbearance for Broadband Personal Communications Services, Forbearance from Applying Provisions of the Communications Act to Wireless Telecommunications Carriers, WT Docket No. 98-100, *Memorandum Opinion and Order and Notice of Proposed Rulemaking*, 13 FCC Rcd 16857, 16914 (1998) (declining to forbear from applying Section 20.12(b) of the Commission's Rules (resale rule) and Sections 201 and 202 of the Communications Act).

[148] *NPRM* at 19281-82 ¶ 35.

[149] Teligent Comments at 29.

[150] PCIA Comments at 13-16; FWCC Comments at 6.

[151] PCIA Comments at 16.

[152] *See* 47 U.S.C. § 160(a).

wireless frequency bands from unnecessary regulations.[153] We are currently conducting a broad analysis with respect to forbearance from applying Title II obligations of the Act and certain provisions of the Commission's rules to various wireless telecommunications carriers, including fixed wireless service providers.[154] The *PCIA Forbearance Order and NPRM* examines our prior efforts to consolidate onerous regulations, as well as, previous application of our forbearance authority.[155] For example, we have streamlined Sections 211 and 214 of the Act and have afforded relief to non-CMRS providers by 1) granting blanket entrance authorizations to all carriers for domestic services; 2) providing for automatic grant of international entrance applications after 14 days in most instances; 3) establishing automatic grant of domestic exit applications after 31 days for non-dominant carriers; and 4) providing that non-dominant carriers need not file contracts for domestic services.[156] In addition, we are exploring our forbearance authority with respect to the Part 101 Services in an outstanding proceeding.[157] Hence, a decision to utilize our forbearance authority in the *Part 101 MO&O and NPRM* will apply to the 24 GHz band as well. As a result, we decline to address any specific forbearance measures for the 24 GHz band at this time. We note that we are currently preparing a staff report in connection with the Section 11 Biennial Review and anticipate its release for comment later this year. We encourage parties to pursue some of these issues concerning streamlining regulations and/or the application of our forbearance authority in that proceeding.

6. Aggregation, Disaggregation and Partitioning

47. *Background.* In a number of recent proceedings, we have adopted a flexible approach for partitioning and disaggregation.[158] This approach is intended to encourage spectrum efficiency and afford all parties an opportunity to respond to market demands for services and/or spectrum in unserved and underserved areas.[159] In this regard, we sought comment on whether to apply such an approach to the 24 GHz band, and if so, what limits, if any, should be placed on the ability of a 24 GHz band licensee to

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[153] PCIA Comments at 15-16.

[154] *See* Personal Communications Industry Association's Broadband Personal Communications Services Alliance's Petition for Forbearance for Broadband Personal Communications Services, *Memorandum Opinion and Order and Notice of Proposed Rulemaking*, 13 FCC Rcd 16857 (1998) (*PCIA Forbearance Order and NPRM*).

[155] *Id.*

[156] *See* 47 C.F.R. § 43.51; Implementation of Section 402(b)(2)(A) of the Telecommunications Act of 1996, Report and Order, 14 FCC Rcd 11364, 11370-75 ¶¶ 8-18, 11378-81 ¶¶ 26-32 (1999); 1998 Biennial Regulatory Review – Review of International Common Carrier Regulations, *Report and Order*, 14 FCC Rcd 4909, 4912-27 ¶¶ 8-40 (1999).

[157] Reorganization and Revision of Parts 1, 2, 21, and 94 of the Rules to Establish a New Part 101 Governing Terrestrial Microwave Fixed Radio Services, WT Docket No. 94-148, *Memorandum Opinion and Order and Notice of Proposed Rule Making*, FCC 00-33 ¶ 83 (rel. Feb. 14, 2000) (*Part 101 MO&O and NPRM*).

[158] *See, e.g., MAS Report and Order*, FCC No. 99-415 at ¶¶ 78-88; *39 GHz MO&O*, 14 FCC Rcd 12428; Revision of Part 22 and Part 90 of the Commission's Rules to Facilitate Future Development of Paging Systems, PR Docket No. 93-253, *Memorandum Opinion and Order on Reconsideration and Third Report and Order*, 14 FCC Rcd 10030, 10101 (1999) (*Paging Systems Third Report and Order*); Rulemaking to Amend Parts 1, 2, 21, and 25, of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, To Reallocate the 29.5-30.0 GHz Frequency Band, To Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, CC Docket No. 92-297, *Fourth Report and Order*, 13 FCC Rcd 11655 (1998) (*LMDS Fourth Report and Order*); *Partitioning and Disaggregation Report and Order*, 11 FCC Rcd 21831.

[159] *Partitioning Report and Order*, 11 FCC Rcd at 21843 ¶ 12.

partition its service area and/or disaggregate its spectrum.[160] We also sought comment on what information we should require parties to file in conjunction with this process.[161]

48. *Discussion.* We received no comments opposing our proposed flexible approach to partitioning and disaggregation for the 24 GHz band. In addition, we note that our proposal is consistent with the approaches adopted in other fixed wireless contexts.[162] Because we continue to believe that the flexibility provided by this approach will accommodate license transferability and provide a mechanism by which new entrants and small businesses are afforded additional opportunities to become service providers in the 24 GHz band,[163] we will adopt our proposal. Thus, we will permit incumbents and new 24 GHz band licensees to partition their service areas along any area defined by the parties. We will also allow aggregation/disaggregation of any spectrum without restriction on the amount of spectrum disaggregated.

49. In the event that a 24 GHz license is partitioned or disaggregated, any partitionee or disaggregatee is authorized to hold its license for the remainder of the original licensee's (i.e., partitionor or disaggregator) license term and a demonstration must be made that the applicable construction requirements have been met for the partitioned area or disaggregated spectrum at the time of renewal. However, we have determined that participants to a partitioning agreement should be permitted to negotiate whether one party or both will be responsible for compliance with these requirements. In addition to being consistent with provisions in other services, we conclude that this approach is appropriate because it will "ensure that licensees have the flexibility to structure their business plans while ensuring that partitioning not be used as a vehicle to circumvent the applicable construction requirements."[164] Thus, parties will be given two options to meet the substantial service construction requirement. Under the first option the parties to the partitioning agreement would certify that they would each separately satisfy the substantial service requirement for their portion of the service area.[165] If either party fails to meet the substantial service requirement by the end of the license term, then the non-performing licensee's authorization would be subject to cancellation at the end of the initial license term.[166] Under the second option, the original licensee or partitionor certifies that it has met or will meet the substantial service requirement for the entire service area during the license term. If the original licensee fails to make the required showing, then this licensee's authorization will be subject to cancellation, but the partitionee's license will not be affected by this cancellation.[167]

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[160] *NPRM*, 14 FCC Rcd at 19279 ¶¶ 27-28. Partitioning is the assignment of geographic portions of a license along geopolitical or user defined boundaries other than those defined by Rand McNally. Disaggregation is the assignment of discrete portions or blocks of licensed spectrum to another entity.

[161] *Id.*

[162] *See LMDS Fourth Report and Order*, 13 FCC Rcd at 11655; *39 GHz MO&O*, 14 FCC Rcd at 12460-61 ¶ 60-63.

[163] Teligent Comments at 25-26.

[164] *See, e.g., LMDS Fourth Report and Order*, 13 FCC Rcd at 11664-65 ¶ 16.

[165] *See, e.g., PCS Order*, 11 FCC Rcd at 21855; *LMDS Report and Order*, 13 FCC Rcd 11665 ¶ 16.

[166] *See, e.g., LMDS Report and Order*, 13 FCC Rcd 11665 ¶ 16.

[167] *Id.*

50. We also conclude that parties to a disaggregation agreement should be given the flexibility to determine which party will assume responsibility for complying with our construction requirements in regard to the disaggregated portion of the license. As with partitioning agreements, parties must certify whether one licensee will fulfill the applicable requirements or whether the parties will share responsibility.[168] In addition, we will permit 24 GHz band licensees to enter into combined partitioning and disaggregation agreements. As we have stated in the past, we believe that offering this option will promote spectral efficiency.[169] We also believe that combined partitioning and disaggregation will speed service to unserved or underserved areas, enhance competition, and encourage new entrants into the market.

51. We consider partitioning and disaggregation to be a form of license assignment that will require prior Commission approval, unless pro-forma in nature.[170] Therefore, a 24 GHz band licensee will be required to file a standard application for approval of assignment on a FCC Form 603.[171] We note that if a licensee has negotiated a frequency coordination agreement with another licensee, such agreement shall remain in effect on all parties regardless of an assignment or partitioning and/or disaggregation arrangements unless a new agreement is reached. In effect, the frequency coordination agreement will convey with the license. Finally, 24 GHz band licensees who receive bidding credits at auction and subsequently seek to partition or disaggregate their spectrum holding(s) will be subject to the unjust enrichment provisions contained in Section 1.2111(e) of our Rules.[172]

7. Foreign Ownership Restrictions

52. *Background.* Foreign ownership and citizenship requirements for 24 GHz band licensees are set forth in Sections 310(a) and 310(b) of the Communications Act, as modified by the 1996 Act, which restricts the issuance of licenses to certain applicants.[173] Section 310(a) prohibits any foreign government or representative from holding a station license. Section 310(b) prohibits certain defined foreign ownership interests in common carrier licenses. In the *NPRM*, we concluded that Section 101.7 of the Commission's Rules,[174] which implements Section 310 of the Act, should be applied to the 24 GHz band.[175] Section 101.7(a) prohibits the granting of any license to be held by a foreign government or its

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[168] *Id.* at 11666 ¶ 19.

[169] We note that our decision to allow combined partitioning and disaggregation is consistent with our approach in other services. *See, e.g., MAS Report and Order*, FCC 99-415 ¶ 88; *39 GHz MO&O*, 14 FCC Rcd at 2460; *Paging Systems Third Report and Order*, 14 FCC Rcd at 10110; *PCS Order*, 11 FCC Rcd at 21866.

[170] *See, e.g., 39 GHz Report and Order*, 12 FCC Rcd 18635 ¶ 73.

[171] *See* 47 C.F.R. § 1.948.

[172] 47 C.F.R. § 1.2111(e).

[173] *See* 47 U.S.C. §§ 310(a), 310(b).

[174] 47 C.F.R. § 101.7(b).

[175] *NPRM*, 14 FCC Rcd at 19277 ¶¶ 23-24.

representative.[176] Section 101.7(b) prohibits the grant of a common carrier license to an applicant who fails any of the four citizenship requirements listed therein.[177]

53. *Discussion.* We received one comment supporting our proposal to extend the Part 101 foreign ownership requirements to 24 GHz band licensees. This commenter agrees that requiring Part 101 compliance is consistent with the application of Section 310 and the World Trade Organization (WTO) Basic Telecommunications Agreements.[178] Based on our review of the record in this proceeding and for the reasons stated in the *NPRM*, we will apply Section 101.7 of the Commissions Rules without modification to the 24 GHz band.

54. As we have done in the case of MDS, satellite service, and LMDS, we will require an applicant electing non-common carrier status to also submit the same information that common carriers applicants must submit in order to address the alien ownership restrictions under Section 310(b) of the Act.[179] Because 24 GHz band licensees are permitted to offer both common and non-common carrier services, we believe this requirement is necessary in order to enable us to ascertain compliance of all 24 GHz band licensees with the alien ownership restrictions set forth in Section 101.7 of the Commission's Rules. This information can be used whenever the licensee changes to common carrier status without imposing an additional filing requirement when the licensee makes the change.[180] We note, moreover, that we would not disqualify an applicant requesting authorization exclusively to provide non-common carrier service from obtaining a 24 GHz band license solely on the basis that its citizenship information would disqualify it from receiving a common carrier license.

55. Accordingly, common carrier and non-common carrier licensees in the 24 GHz band will be required to provide the alien ownership information requested by FCC Form 601. Moreover, both common carriers and non-common carriers must amend their FCC Form 602 to reflect any changes in foreign ownership information. We note that, in response to the WTO Basic Telecommunications Agreement, we have relaxed our policy concerning foreign ownership of common carrier licenses under Section 310(b)(4). We now presume that ownership by entities that are WTO members serves the public interest. However, ownership by entities from countries that are not WTO members continues to be subject to the effective competitive opportunities test established by the Commission.[181]

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[176] 47 C.F.R. § 101.7(a).

[177] 47 C.F.R. § 101.7(b).

[178] Teligent Comments at 24-25.

[179] *See MDS Report and Order*, 2 FCC Rcd at 4253 ¶ 16 (1987); Streamlining the Commission's Rules and Regulations for Satellite Application and Licensing Procedures, IB Docket No. 95-117, *Report and Order*, 11 FCC Rcd 21581, 21599 ¶ 43 (1996); *LMDS Second Report and Order*, 12 FCC Rcd at 12651 ¶ 243.

[180] We note, however, that to the extent that a licensee's decision to change its regulatory status raises issues with respect to that licensee exceeding the benchmark contained in Section 310(b)(4), the rules require the Commission's prior approval before the licensee can make this change. Rules and Policies on Foreign Participation in the U.S. Telecommunications Market and Market Entry and Regulation of Foreign-Affiliated Entities, IB Docket Nos. 97-142 and 95-22, Report and Order and Order on Reconsideration, 12 FCC Rcd 23891, 23940-41 ¶¶ 111-118 (1997).

[181] *See* Rules and Policies on Foreign Participation in the U.S. Telecommunications Market, IB Docket No. 97-142, Market Entry and Regulation of Foreign-Affiliated Entities, IB Docket No. 95-22, *Report and Order and Order on Reconsideration*, 12 FCC Rcd 23891, 23935-47 ¶¶ 97-132 (1997).

C. Technical Rules

56. As discussed above, our general proposal was to apply the technical rules in Part 101 to govern the use of the 24 GHz band, including the technical parameters, such as channelization, frequency tolerance and stability, power and emission limitations, antennas, and equipment authorization.[182] We note, however, that the technical parameters currently governing 24 GHz band operations were done in the *Reallocation Order* and were derived from those applied to DEMS operations at 18 GHz.[183] Therefore, there was initial concern as to whether these parameters were suited specifically for the 24 GHz band. We requested comment on our proposed general approach for the 24 GHz band.[184] Specifically, we sought comment on whether operations in this band should be limited to digital modulation and whether future development of the 24 GHz band will be facilitated by adopting technical parameters different from those currently provided for in our Part 101 rules.[185] We also proposed the retention of a separate emission mask for the 24 GHz band by adding a new subsection, (a)(5), to Section 101.111(a).[186] In addition, we requested comment regarding the licensing and coordination of 24 GHz stations. In this connection, we proposed to replace the current requirement for licensing of individual nodal stations with a coordination requirement. Further, we proposed to remove the current 80 km coordination distance, and instead require that 24 GHz band licensees coordinate their facilities whenever their facilities have line-of-sight into other 24 GHz band licensees' facilities or are within the same geographic area.[187] We also proposed that licensees and manufacturers be subject to the RF radiation exposure requirements specified in Sections 1.1307(b), 2.1091 and 2.1093 of the Commission's Rules.

1. Emission Mask

57. Many commenters suggest that the proposed emission mask requirement in Section 101.111(a)(5) is inappropriate for the 24 GHz band and request that we instead apply the emission mask set forth in Section 101.111(a)(2)(ii) of our Rules.[188] One commenter notes that the proposed mask is too lax with regard to channel roll off and requires an unachievable noise floor.[189] As an alternative, commenters suggest that the emission mask in Section 101.111(a)(2)(ii) will result in an appropriate level of adjacent channel interference protection and a consistent mask for all frequency bands above 15 GHz, thereby making it easier for manufacturers to design equipment.[190] Teligent requests that we grant similar regulatory treatment for 24 GHz band licensees that was accorded to 39 GHz licensees regarding the applicability of emission limits for aggregated channel blocks.[191] Teligent

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[182] *NPRM*, 14 FCC Rcd at 19282-83 ¶ 36.

[183] *Id.* at ¶ 37.

[184] *Id.*

[185] *Id.*

[186] Amendment to Parts 1, 2, and 101 of the Commission's Rules To License Fixed Services at 24 GHz, ET Docket 99-327, *Erratum to Notice of Proposed Rulemaking* at ¶ 7 (rel. Dec. 23, 1999).

[187] *Id.* at ¶ 38-39.

[188] PCIA Comments at 19; FWCC Comments at 5.; Nortel Comments at 2-4; Teligent Comments at 29-32.

[189] Nortel Comments at 3.

[190] Nortel Comments at 4-5; Teligent Comments at 31-32.

[191] Teligent Comments at 32.

contends that there is no need to protect against adjacent channel interference when adjacent channels are licensed to the same entity, and urges us to modify Section 101.109, Note 7 of our Rules to include a reference to the 24 GHz band.[192] Teligent also seeks clarification that the proposed emission mask (1) applies only to the edge of each channel, and not to subchannels established by licensees; (2) can be satisfied by locating the carrier frequencies of the subchannel radios sufficiently far from the channel edges so that the emission levels of the mask are satisfied; and (3) be interpreted such that the value B is the 40 megahertz bandwidth of the licensed channel, even in the case where narrower subchannels are used.[193] Teligent also requests that, in the case of subchannel use, the mean output power to be used in emission mask calculations is the sum of the output power levels of a fully populated channel.[194]

58. Based on the record in this proceeding, we will adopt the emission mask set forth in Section 101.111(a)(2)(ii) of the Commission's Rules, with some modifications, for the 24 GHz band. We note that the maximum value of B in the equation for the emission mask is normally taken from the bandwidth table set forth in Section 101.109 of our Rules which shows a maximum value of 40 MHz. Even though we are allowing disaggregation and aggregation of spectrum in addition to allowing both sides of the channel pair to be used as transmit, the actual value of B can be much larger. However, we will specify that the maximum value of B used in the emission mask equation is limited to 40 MHz for all cases. Also, the minimum value of B shall be 40 MHz regardless of the size of the channel actually used and regardless of whether subchannels are being used. We shall also modify Section 101.109, Note 7 to include reference to the 24 GHz band and its aggregated bandwidths. This will make the roll-off at the edges of the band similar no matter how large or small the actual bandwidth is.

2. Equipment Requirements

59. Both Nortel and Teligent urge the Commission to "grandfather" previously deployed equipment. Specifically, Teligent is currently operating its transmitters pursuant to a waiver of the DEMS emission mask rule in Section 101.111 of the Commission's Rules.[195] The initial waiver was necessary, following the DEMS relocation, because the emission mask in Section 101.111 was developed for 18 GHz band operations and was not suited for 24 GHz band operations.[196] When the DEMS incumbents first began to relocate from the 18 GHz band, no 24 GHz band equipment existed. Therefore, the DEMS incumbents were forced to modify existing 23 GHz band equipment to utilize the 24 GHz band. Since we do not wish to adopt a minimum standard for this modified equipment, and commenters have not requested it, we instead considered the comments requesting that we grandfather this equipment. Teligent states that it has entered into long-term contracts with its equipment vendors, and thus requests that we grandfather its current transmitting equipment for the remainder of the useful life of the equipment.[197] Moreover, Nortel and Teligent both request that licensees be given a sufficient transition period, wherein licensees would be permitted to continue deploying this equipment until new equipment, which satisfies the standards adopted in this proceeding, is commercially available.[198] Nortel notes that such a transition

[192] *Id.* at 32-33.

[193] *Id.*

[194] *Id.* at 33-34.

[195] *See Modification Order*, 12 FCC Rcd at 8767 ¶ 3.

[196] Teligent Comments at 14.

[197] *Id.* at 15.

[198] Nortel Comments at 5; Teligent Comments at 15.

period is consistent with Commission precedent and will allow licensees to "make full use of their equipment, and avoid service disruptions to customers."[199]

60. In the past, we have allowed licensees to continue to use equipment that did not comply with newly implemented rules changes either indefinitely or for a specified period.[200] Also, in this instance, we do not find that grandfathering the 24 GHz band equipment will greatly undermine the technical standards adopted in this proceeding. The technical standards for 24 GHz band are designed to promote effective means of coordinating stations near the boundary regions of adjacent areas, to assist equipment manufacturers by providing them with guidelines for the design of 24 GHz band equipment, and to ensure that licensees utilize the spectrum efficiently. Although grandfathering 24 GHz band equipment may cause added difficulty to the coordination of existing systems, this should only be a problem along the service area boundaries and we believe that any risk of harmful interference can be resolved by way of coordination among the licensees. Furthermore, we agree with Nortel and Teligent that requiring licensees to immediately replace existing equipment could potentially disrupt service currently being provided to the public. Finally, we believe that any interference issues will be short-term in nature, and will be resolved once the grandfathered equipment has reached the end of its useful life. Thus, we will allow any equipment that is put in place by January 1, 2001 to be grandfathered indefinitely, thereby allowing 24 GHz band operators to continue to utilize their recently deployed equipment.[201] However, any equipment deployed after January 1, 2001, must comply with the technical standards adopted in this proceeding.

61. Additionally, Teligent requests that 24 GHz band equipment be subject to our verification procedures, rather than certification. Currently, Section 101.139 of the Commission's Rules requires that point-to-multipoint transmitters in the 39 GHz band, LMDS and DEMS must be a type which has been certified by the Commission, however, most other point-to-point microwave transmitters are subject to the less onerous verification procedure.[202] Teligent indicates that utilizing the verification procedure

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[199] Nortel Comments at 5.

[200] *See, e.g.*, Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them and Examination of Exclusivity and Frequency Assignment Policies of the Private Land Mobile Services, PR Docket No. 92-235, *Second Memorandum Opinion and Order*, 14 FCC Rcd 8642, 8658-59 ¶ 34 (1999) (*PLMRS Second MO&O*) (allowing low power licensees to remain at low power and continue to use wideband equipment on a secondary basis); *PLMRS Second MO&O*, 14 FCC Rcd at 8665 ¶ 47 (permitting new licensees on emergency medical communications channels to continue to use non-compliant equipment for one year following effective date of new transmitting and receiving requirements, because type accepted equipment was not yet available); Amendment of Part 25 of the Commission's Rules and Regulations to Reduce Alien Carrier Interference Between Fixed-Satellites at Reduced Orbital Spacings and to Revise Applications Processing Procedures for Satellite Communications Services, CC Docket No. 86-496, *Second Report and Order and Further Notice of Proposed Rulemaking*, 8 FCC Rcd 1316, 1322 ¶¶ 38-39 (1993) (extending compliance deadline for non-conforming antennas by one year); Amendment of Section 94.65(3) of the Commission's Rules to Rechannelize the 2450-2483.5 MHz Band, PR Docket No. 89-113, *Report and* Order, 5 FCC Rcd 4655, 4656-57 ¶¶ 13-17 (1990) (permitting systems previously authorized to operate at 2.5 GHz to continue to operate existing 800 kHz channel equipment indefinitely, rather than convert to 625 kHz channels).

[201] January 1, 2001, is the mandatory deadline for the incumbent licensees to relocate from 18 GHz to 24 GHz. *See supra* ¶ 4.

[202] 47 C.F.R. § 101.139.

promotes the public interest by allowing faster implementation of new technology.[203] We note that this matter is being addressed in the *Part 101* proceeding, and should be decided in that proceeding.[204]

3. Efficiency Standard

62. Section 101.141 of the Commission's Rules requires that 24 GHz band DEMS licensees meet a spectral efficiency standard.[205] However, in this proceeding we have altered the nature of 24 GHz Service to allow more flexibility in system design and to license on a geographic basis. Moreover, consistent with our actions in other proceedings,[206] we believe it unwise to adopt technical rules that will require updating as technology advances. Therefore, we eliminate the 24 GHz band from the spectral efficiency standard. We believe that this will provide 24 GHz band licensees with the necessary maximum flexibility to respond to market forces.

4. Antenna Directivity

63. Comsearch requests that we amend the directional antenna standards of Section 101.115 of our Rules to allow for use of one foot diameter parabolic antennas.[207] Teligent requests that the user station antenna directivity requirement in Section 101.115 be eliminated.[208]

64. Based on our review of the record in this proceeding and the proposals presented by Comsearch and Teligent , we conclude that our rules regarding antenna directivity should be modified. In this regard, we will amend the directional antenna standards of Section 101.115 of our Rules to allow for use of one foot diameter parabolic antennas. We will effectuate this amendment by changing the antenna beamwidth value to 2.8 degrees instead of 2.2 and increasing the pattern to require a front-to-back ratio of 45 dB for Category B and 60 dB for Category A instead of 36 dB and 55 dB, respectively. Although we are not persuaded that the nodal station and user station antenna directivity requirement in Section 101.115 should be eliminated, we are convinced that it is unnecessary to require 24 GHz band licensees to comply with these standards in every instance. However, we decline to eliminate the requirement entirely, because it provides an established technical standard for the Commission to apply in the event that licensees are unable to resolve a coordination conflict. One such instance where we believe that the antenna standards may be needed is within 56 km of the U.S./Canadian border where 24 GHz band licensees are required to comply with an international coordination agreement.[209] Another example is near the service area boundaries where coordination with other licensees takes place. Also, we will require the use of higher performance antennas where interference problems can be resolved by the use of such antennas. This decision will grant 24 GHz band licensees greater flexibility by allowing point-to-point, point-to-multipoint, and/or multipoint-to-multipoint service systems usage. We note, however, that allowing both the nodal and user stations to utilize non-directional antennas may result in more

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[203] Teligent Comments at 42.

[204] *Part 101 MO&O and NPRM*, 15 FCC Rcd 1329, 3157-58 ¶ 57.

[205] 47 C.F.R. § 101.141.

[206] *39 GHz Report and Order*, 12 FCC Rcd at 18629 ¶ 60; *LMDS Second Report and Order*, 12 FCC Rcd at 12672 ¶ 301.

[207] Comsearch Comments at 6.

[208] Teligent Comments at 39.

[209] At present no such agreement exists with Mexico.

complicated and less effective frequency coordination. Licensees are expected to resolve such difficulties with sharing agreements.

5. Licensing and Coordination

65. As stated above, commenters agree with our proposal to eliminate individual licensing for nodal stations and adopt geographic area licensing in the 24 GHz band with a frequency coordination requirement.[210] However, we note that most of these commenters believe that the coordination requirements we proposed require better clarification or delineation. For instance, Teligent comments that, while it agrees that an 80 km coordination distance is too large, use of a specified coordination distance is an effective method of coordination and consistent with operations in other frequency bands.[211] Teligent also suggests that a coordination distance be developed by an industry body, such as NSMA, and that, in the interim, 40 km would suffice.[212] Other commenters request a more precise definition for the line-of-sight coordination requirement or an alternative coordination requirement. These commenters recommend that an alternative coordination requirement might include one or a possible combination of distance, line-of-sight, power flux density (PFD) limit, and radius requirements.[213] Finally, Comsearch requests that we clarify whether both nodal and user stations are to be coordinated or only nodal stations.[214] It also requests clarification of any filing requirements for station modification and deletion.[215]

66. Based upon or review of the record in this proceeding, we conclude that we should eliminate individual licensing for nodal and user stations and adopt a more precise definition for the line of sight coordination requirement by requiring coordination of both nodal and user stations when they have optical line of sight into other licensees' areas or other licensees' facilities within the same geographic area. In addition, we note that the U.S. and Canada have now agreed on the coordination parameters between the countries in the border areas.[216] The first step to coordination in this agreement is for the two parties to form a mutual agreement on the use of their systems. If this fails, the agreement specifies PFD levels which trigger coordination for stations which are within 56 km of the border and have an optical line-of-sight into the adjacent area. The agreement considers mitigating techniques such as antenna discrimination, polarization, frequency offset, shielding, site selection and power control to facilitate coordination of systems. We are aware that for different areas of the country the rainfall varies as well as the terrain and foliage which affect shielding. Rather than specify a distance such as 40 km which Teligent suggested, we believe the most flexible approach is to recognize the variations of each unique area and to allow the relevant licensees to mutually resolve their coordination problems with as little input from the Commission as possible.

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[210] *See* PCIA Comments at 18-19; FWCC Comments at 7-8; Nortel Comments at 4; Comsearch Comments at 2-3; Teligent Comments at 34.

[211] Teligent Comments at 37.

[212] *Id.* at 37-38.

[213] FWCC Comments at 8; PCIA Comments at 19.

[214] Comsearch Comments at 4.

[215] *Id.* at 4-6.

[216] *See* Interim Arrangement Concerning the Sharing between Canada and the United States of America on Broadband Wireless Systems in the Frequency Bands 24.25-24.45 GHz, 25.05-25.25 GHz, and 38.6-40.0 GHz signed by the FCC on Dec 8, 1999 and Canada on Dec 21, 1999 (*Canadian Agreement*).

67. The Canadian Agreement specifies that no coordination is required if the PFD at the boundary is –114 dBW/m^2 in any 1 MHz. It also specifies that entities can deploy equipment subject to successful coordination between affected licensees with PFDs up to –94 dBW/m^2 in any 1 MHz. If powers exceed a PFD of to –94 dBW/m^2 in any 1 MHz, the deployment is subject to the consent of the licensee(s) in the adjacent service area. Therefore, we will use the PFD levels established in the Canadian Agreement as recommended guidelines for coordination between U.S. licensees, but not require them to be met (other than for Canadian coordination) to allow for the licensees in each area to establish values more in line with the systems and techniques they deploy. In this connection, we note that licensees will have varying requirements based on their specific system architecture, the local terrain, and the rainfall characteristics of their region. Several commenters suggested that the industry, through a group such as NSMA, study the appropriate PFD levels and determine a standard for coordination. While we endorse this industry study approach in the future, we believe that it would be inappropriate at this time to specify, by rule, the PFD values at the EA boundary for which coordination is required between U.S. licensees. We believe that ultimately the licensees need to discuss their systems with each other to optimize the usage in each area, and develop sharing agreements, and we will only specify recommended PFD guidelines to be followed when a licensee's antenna has optical line-of-sight into another area and is within 56 km.

6. RF Safety

68. In the *NPRM*, we tentatively concluded that routine environmental evaluations for RF exposure should be required in the case of fixed operations, including base stations, when the effective radiated power (ERP) is greater than 1,000 watts. We received no comments on this proposal. Therefore, for the reasons discussed in the *NPRM*, we will require licensees and manufacturers to be subject to the RF radiation exposure requirements specified in Sections 1.1307 (b) of the Commission's Rules.[217] We will modify this rule accordingly to apply to user and nodal stations.

D. Competitive Bidding Procedures

1. Statutory Requirements

69. *Background.* The Balanced Budget Act of 1997 amended Section 309(j) of the Act to require the Commission to award mutually exclusive applications for initial licenses or permits using competitive bidding procedures, with very limited exceptions.[218] Based on our tentative conclusion that it would serve the public interest to implement a geographic area licensing approach, we tentatively concluded in the *NPRM* that mutually exclusive applications for initial licenses in the 24 GHz band must be resolved through competitive bidding.[219] In the *NPRM* we also stated that in determining whether to resolve mutually exclusive applications for licenses in the 24 GHz band through competitive bidding, we

[217] 47 C.F.R. §§ 1.1307(b).

[218] *See* 47 U.S.C. § 309(j)(1), (2). Section 309(j)(2) exempts from auctions licenses and construction permits for public safety radio services, digital television service licenses and permits given to existing terrestrial broadcast licensees to replace their analog television service licenses, and licenses and construction permits for noncommercial educational broadcast stations and public broadcast stations.

[219] *NPRM*, 14 FCC Rcd at 19286 ¶¶ 43-45.

intend to adhere to any conclusions we reach in the Balanced Budget Act proceeding regarding the scope of our auction authority.[220]

70. *Discussion.* In light of our decision to adopt a geographic area licensing approach based on EAs for the 24 GHz band,[221] under which mutually exclusive applications may be filed, we conclude that mutually exclusive initial applications for the 24 GHz band must be resolved through competitive bidding.[222] We note that we have not yet reached any conclusions regarding the issues raised in the Balanced Budget Act proceeding related to Section 309(j)(6)(E). However, we find no basis in the record for considering an approach to licensing the 24 GHz band other than geographic area licensing. While certain commenters have suggested the use of geographic areas other than EAs, none has argued that we should use a licensing scheme that would preclude the filing of mutually exclusive applications. For services in which we have found that a licensing approach based on geographic area licensing serves the public interest, we have assigned licenses through competitive bidding. This approach is consistent with other Commission decisions made since the enactment of the Balanced Budget Act.[223]

2. Incorporation by Reference of Part 1 Standardized Auction Rules

71. *Background.* In the *NPRM* we proposed to conduct the auction for initial licenses in the 24 GHz band in conformity with the general competitive bidding rules set forth in Part 1, Subpart Q, of the Commission's rules, and substantially consistent with the bidding procedures that have been employed in previous Commission auctions. Specifically, we proposed to employ the Part 1 rules governing designated entities, application issues, payment issues, competitive bidding design, procedure and timing issues, and collusion.[224]

72. *Discussion.* We adopt our proposal to conduct the auction for initial licenses in the 24 GHz band in conformity with the general competitive bidding rules set forth in Part 1, Subpart Q, of the Commission's Rules, unless otherwise provided herein.[225] This decision is consistent with our ongoing effort to streamline our general competitive bidding rules for all auctionable services, increase the efficiency of the competitive bidding process, and provide more guidance to auction participants. Moreover, all commenters who addressed the issue agree that use of the Part 1 competitive bidding rules to award licenses for the 24 GHz band is consistent with statutory requirements and will be beneficial in that it will lead to the rapid deployment of service in the 24 GHz band.[226] Our application of the Part 1

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[220] *Id. See also* Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended, WT Docket No. 99-87, *Notice of Proposed Rule Making*, 14 FCC Rcd 5206 (1999).

[221] *See supra* ¶¶ 13-18.

[222] Teligent supports the Commission's tentative conclusion that mutually exclusive applications for initial licenses in the 24 GHz band must be resolved through competitive bidding. Teligent Comments at 43. *See also* RTG Comments at 4.

[223] *See, e.g.*, Amendment of the Commission's Rules Regarding Multiple Address Systems, WT Docket No. 97-81, *Report and Order*, FCC No. 99-415 at ¶ 14 (rel. Jan. 19, 2000).

[224] *NPRM*, 14 FCC Rcd at 19286 ¶ 46.

[225] *See infra* at ¶¶ 83-88 for a discussion of the attribution rule we adopt today.

[226] *See, e.g.*, Teligent Comments at 42-46.

rules to the 24 GHz band will include any amendments that may be adopted in the ongoing Part 1 proceeding.[227]

73. Teligent requests that we auction licenses in the 24 GHz band using the simultaneous multiple round auction design and not implement real time bidding for this auction. Teligent is concerned that the implementation of real time bidding may delay the auction due to the necessity for development and testing of new software.[228] Consistent with the Balanced Budget Act[229] and current practice, the Bureau will seek comment on matters such as auction design in a public notice prior to the auction.

74. Teligent also recommends that the Commission implement the shortest period allowable for the filing of petitions to deny against long-form applications following the auction.[230] Section 1.2108(b) provides that the Commission shall not grant a license less than seven days after public notice that long-form applications have been accepted for filing and that, in all cases, the period for filing petitions to deny such applications shall be no shorter than five days.[231]

75. We will adopt a ten-day period for filing petitions to deny against long-form applications. Although we have the authority to reduce the filing period to five days, we find that a ten-day filing period serves the public interest by providing parties, including small businesses, more flexibility in challenging license awards than a five-day period. Nonetheless, we delegate to the Bureau the discretion to implement a five-day period in exigent circumstances.

3. Provisions for Designated Entities

a. Small Business Definitions and Bidding Credits

76. *Background.* In the *NPRM*, we observed that the capital costs of operational facilities in the 24 GHz band are likely to vary widely. Accordingly, we sought to adopt small business size standards that would afford licensees substantial flexibility. We proposed to adopt the definitions the Commission adopted for broadband PCS for "small" and "very small" businesses, which the Commission also had adopted for 2.3 GHz and 39 GHz applicants.[232] Thus, we proposed to define small businesses as entities with average annual gross revenues not to exceed $40 million for the preceding three years and very small businesses as entities with average annual gross revenues not to exceed $15 million for the preceding three years. We further proposed to provide a 15 percent bidding credit to small businesses and

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[227] The *Second Further Notice of Proposed Rule Making* in the Part 1 proceeding is currently pending. Amendment of Part 1 of the Commission's Rules – Competitive Bidding Procedures, WT Docket No. 97-82, *Third Report and Order and Second Further Notice of Proposed Rule Making*, 13 FCC Rcd 374, 471-484 (1998). *See also* Amendment of Part 1 of the Commission's Rules – Competitive Bidding Procedures, WT Docket No. 97-82, *Third Further Notice of Proposed Rule Making*, 14 FCC Rcd 21558 (1999).

[228] Teligent Comments at 46-47.

[229] *See* Balanced Budget Act of 1997 § 3002(a)(E)(i); 47 U.S.C. § 309(j)(3)(E)(i).

[230] Teligent Comments at 47-48.

[231] 47 C.F.R. § 1.2108. *See also* Balanced Budget Act of 1997 § 3008.

[232] *NPRM*, 14 FCC Rcd at 19287-19288 ¶¶ 48, 49. *See also* 47 C.F.R. §§ 24.720(b)(1)(2), 27.210(b)(1)(2), 101.1209(b)(1)(i)(ii).

a 25 percent bidding credit to very small businesses.[233] In addition, we sought comment on whether specific provisions should be adopted with respect to rural telephone companies.

77. *Discussion.* We will modify our proposal and adopt three small business definitions. Two of the commenters, PCIA and RTG, state that, in light of our proposal to use EAs, the proposed two-tiered system is not sufficient to allow small businesses the opportunity to participate at auction.[234] Because the capital costs of operational facilities in the 24 GHz band are likely to vary widely, we believe that the use of three small business definitions will be useful in promoting opportunities for a wide variety of applicants in the 24 GHz band. Accordingly, we will define a very small business as an entity with average annual gross revenues not to exceed $3 million for the preceding three years, a small business as an entity with average annual gross revenues not to exceed $15 million for the preceding three years, and an entrepreneur as an entity with average annual gross revenues not to exceed $40 million for the preceding three years.

78. Some of the commenters are concerned that our proposed level of bidding credits is too low.[235] PCIA and RTG request that we consider the three levels of bidding credits that were provided to participants in the LMDS auction.[236] Teligent supports bidding credits mirroring those offered for 39 GHz.[237] While we agree with PCIA and RTG that we should adopt three-tiered bidding credits, we decline to adopt the higher level of credits provided to participants in the LMDS auction. We will adopt the bidding credits provided in the Part 1 general competitive bidding rules. Thus, very small businesses will receive a bidding credit of 35 percent, small businesses will receive a bidding credit of 25 percent, and entrepreneurs will receive a bidding credit of 15 percent.[238]

79. In the *Part 1 Third Report and Order*, the Commission established a standard schedule of bidding credits for small businesses.[239] While these bidding credits are higher than some previously adopted for specific services, we concluded in the *Part 1 Third Report and Order* that, based on our auction experience and the fact that we have decided to suspend the use of installment payments, the schedule adopted would provide adequate opportunities for small businesses to participate in spectrum auctions.[240] We find that it is not necessary to depart from the Part 1 schedule here by providing the same levels of bidding credits that were offered for LMDS. The higher LMDS bidding credits were established prior to our adoption of the Part 1 bidding credits, at a time when we were beginning to reexamine our installment payments plans and were concerned about compensating for the decision not to offer

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[233] *NPRM*, 14 FCC Rcd at 19287-19288 ¶¶ 48, 49.

[234] PCIA Comments at 20-21; RTG Comments at 17-18.

[235] PCIA Comments at 20-21; RTG Comments at 17-18; Teligent Reply Comments at 5-6.

[236] PCIA Comments at 20; RTG Comments at 18. In the LMDS auction, bidding credits of 35 percent and 45 percent were available for small and very small businesses, respectively, and a 25 percent bidding credit was available for entrepreneurs. *See* 47 C.F.R. § 101.1107.

[237] Teligent Comments at 49; Teligent Reply Comments at 5-6. For the 39 GHz auction, small businesses received a 25 percent bidding credit and very small businesses received a 35 percent bidding credit. *See* 47 C.F.R. § 101.1208

[238] 47 C.F.R. § 1.2110(e).

[239] *Part 1 Third Report and Order*, 13 FCC Rcd at 402-04 ¶¶ 45-48; 47 C.F.R. § 1.2110(e).

[240] *Id.* at 403, 404 ¶ 47.

installment payments to LMDS licensees.[241] Based on our subsequent experience, we believe that the levels of bidding credits in the Part 1 schedule are sufficient to promote the participation of small businesses in the 24 GHz band.

80. Teligent stresses that bidding credits should be uniform among competing services and that the credits offered for the 39 GHz band should be adopted for the 24 GHz band because of similarities between the bands and the need to eliminate any regulatory disparities that may lead to marketplace distortions.[242] We are not persuaded by Teligent's argument. Our proposal of bidding credits in the 39 GHz band predates the effective date of the Part 1 amendments. As we noted above, our general competitive bidding rules increase the efficiency of the competitive bidding process and provide more guidance to auction participants. We also note that there are many variables affecting auction behavior of bidders. While differing credit levels result in differing trade-offs of the interests of designated entities and non-designated entities within each auction, it is not clear that differing credit levels disadvantage winning bidders in one auction as a whole relative to the winning bidders of another auction. Success of a company after licensing will not depend on the bidding credit initially afforded, but upon the ability to keep up with ever changing marketplace conditions and needs. Thus, we are not persuaded at this time that it would be in the public interest to deviate from the general competitive bidding rules set forth in Part 1, subpart Q, of the Commission's rules.

81. RTG suggests that the Commission should provide bidding credits to rural telephone companies irrespective of such companies' gross revenues.[243] Teligent, however, opposes RTG's suggestion, arguing that RTG has presented no sound basis for additional bidding credits for rural telephone companies and that the application of such bidding credits would distort the free and efficient operation of the market.[244] We are not persuaded by RTG's suggestion that the Commission should provide special bidding credits for rural telephone companies in order to meet its obligation under Section 309(j) to ensure that rural telephone companies have the opportunity to participate in spectrum-based services. The record in this proceeding does not provide sufficient evidence that large rural telephone companies encounter barriers to capital formation comparable to those faced by other designated entities. Moreover, the vast majority of rural telephone companies that have participated in the Commission's auctions to date have identified themselves as small businesses and have qualified for bidding credits on that basis.[245] Thus, we conclude that small business bidding credits are sufficient to ensure that rural telephone companies have opportunities to participate in the 24 GHz auction. However, if in future proceedings a sufficient record can be adduced, we may adopt incentives including bidding

[241] *See* Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, *Second Order on Reconsideration*, CC Docket No. 92-297, 12 FCC Rcd 15082, 15095-15096 ¶¶ 19-20 (1997).

[242] Teligent Comments at 49; Teligent Reply Comments at 5-6.

[243] RTG Comments at 18.

[244] Teligent Reply Comments at 6-7.

[245] To date, 89 percent of rural telephone companies participating in Commission auctions of wireless licenses have identified themselves as small businesses on their FCC Form 175 short-form applications.

credits to promote the deployment of wireless telecommunications services to areas with little or no access to telecommunication services.[246]

82. Further, we remain committed to meeting the statutory objectives of promoting economic opportunity and competition, avoiding excessive concentration of licenses, and ensuring access to new and innovative technologies by disseminating licenses among a wide variety of applicants, including small businesses, rural telephone companies, and businesses owned by members of minority groups and women. In addition to helping rural telephone companies, we believe the bidding credits we adopt here for small businesses will assist in meeting these objectives because many minority- and women-owned entities are small businesses and will therefore qualify for these special provisions.[247] We note too that the Commission's Office of Communications Business Opportunities has initiated several studies to gather information regarding barriers to entry faced by minority- and women-owned firms that wish to participate, or have participated, in Commission auctions. In addition, we will continue to track the rate of participation in our auctions by minority- and women-owned firms and evaluate this information with other data gathered to determine whether provisions to promote participation by minorities and women can satisfy judicial scrutiny.[248] If a sufficient record can be established, it may be appropriate to consider race- and gender-based auction provisions at that time.

b. Attribution of Gross Revenues of Investors and Affiliates

83. *Background.* In the *NPRM*, in the context of proposing the use of the Part 1 general competitive bidding rules, we noted that we have sought comment on attribution rules in the *Second Further Notice of Proposed Rule Making* in the Part 1 proceeding.[249]

84. *Discussion.* We will adopt attribution rules for the 24 GHz band that are consistent with the Commission's proposal in the *Part 1 Second Further Notice of Proposed Rule Making*, wherein we proposed a "controlling interest" standard as the general attribution rule for all future auctions.[250] Under this standard, we will attribute to the applicant the gross revenues of its controlling interests and their affiliates in assessing whether the applicant is qualified to take advantage of our small business provisions.

85. A "controlling interest" includes individuals or entities, or groups of individuals or entities, that have control of the applicant under the principles of either *de jure* or *de facto* control. *De jure* control is typically evidenced by the holding of more than 50 percent of the voting stock of a

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[246] *See* Extending Wireless Telecommunications Services To Tribal Lands, *Report and Order and Further Notice of Proposed Rule Making*, WT Docket No. 99-266, FCC 00-209 (2000). We remain committed to encouraging the deployment of advanced telecommunications capability to all Americans on a reasonable and timely basis. *See* Section 706(a) of the Telecommunications Act of 1996, Pub.L. 104-104, Title VII, § 706, Feb. 8, 1996, 110 Stat. 153, reproduced in the notes under 47 U.S.C. § 157.

[247] *See supra* ¶¶ 77-78.

[248] *See Adarand Constructors, Inc. v. Peña*, 515 U.S. 200 (1995); *United States v. Virginia*, 518 U.S. 515 (1996).

[249] *NPRM*, 14 FCC Rcd at 19287 ¶ 46.

[250] *See Part 1 Third Report and Order*, 13 FCC Rcd at 477-78 ¶ 185-86.

corporation or, in the case of a partnership, general partnership interests. *De facto* control is determined on a case-by-case basis; our analysis includes the criteria set forth in *Ellis Thompson*.[251]

86. The rule we adopt here provides specific guidance on the calculation of various types of ownership interests. For purposes of calculating equity held in an applicant, the definition provides for full dilution of certain stock interests, warrants and convertible debentures. In addition, the definition provides for attribution of partnership and other ownership interests, including stock interests held in trust, non-voting stock and indirect ownership through intervening corporations. When an applicant cannot identify controlling interests under the definition, the revenues of all interest holders in the applicant and their affiliates will be attributed.[252] For example, if a company is owned by four entities, each of which has 25 percent voting equity, and no shareholders' agreement or voting trust gives any one of them control of the company, the revenues of all four entities must be attributed to the applicant. Treating such a corporation in this way is similar to our treatment of a general partnership—all general partners are considered to have a controlling interest.

87. Our intent is to provide flexibility that will enable legitimate small businesses to attract passive financing in a highly competitive and evolving telecommunications marketplace. At the same time, we believe that this controlling interest threshold will function effectively to ensure that only those entities truly meriting small business status are eligible for small business provisions. In particular, we believe that the *de jure* and *de facto* concepts of control used to determine controlling interests in an applicant and the application of our affiliation rules will effectively prevent larger firms from illegitimately seeking status as a small business.

88. Wireless One requests that we clarify that for the purpose of determining eligibility for bidding credits, personal income is not to be included in calculating the aggregate gross revenues of the applicant, its affiliates and controlling principals.[253] As Wireless One points out, we have previously stated that the personal income of an individual is part of personal net worth and thus not attributable.[254] However, we note that operation of our definition of "affiliate" will cause all affiliates of a controlling interest to be affiliates of the applicant. Thus, although we do not attribute the personal income of an

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[251] *See Ellis Thompson Corporation*, 9 FCC Rcd 7138, 7138-7139 ¶ 9 (1994) ("*Ellis Thompson*"), in which the Commission identified the following factors used to determine control of a business: (1) use of facilities and equipment; (2) control of day-to-day operations; (3) control of policy decisions; (4) personnel responsibilities; (5) control of financial obligations; and (6) receipt of monies and profits. *See also Intermountain Microwave*, 24 Rad. Reg. (P&F) 983 (1963); In re Application of Baker Creek Communications, L.P. for Authority to Construct and Operate Local Multipoint Distribution Services in Multiple Basic Trading Areas, *Memorandum Opinion and Order*, 13 FCC Rcd 18709 (1998) (discussing in detail the factors constituting *de facto* control); Stephen F. Sewell, *Assignments and Transfers of Control of FCC Authorizations Under Section 310(d) of the Communications Act of 1934*, 43 Fed. Comm. L.J. 277 (1991).

[252] *See* 47 C.F.R. § 1.2110(b)(4).

[253] Wireless One Comments at 3.

[254] *See, e.g.*, Revision of Part 22 and Part 90 of the Commission's Rules to Facilitate Future Development of Paging Systems, WT Docket No. 96-18, *Memorandum Opinion and Order on Reconsideration and Third Report and Order*, 14 FCC Rcd at 10086 ¶ 100 (1999); "Wireless Telecommunications Bureau Responds to Questions About the Local Multipoint Distribution Service Auction," *Public Notice*, 13 FCC Rcd at 346 (1998); *Competitive Bidding Fifth Memorandum Opinion and Order*, 10 FCC Rcd at 421 ¶ 30 (1994).

individual with a controlling interest in an applicant, if this individual has a controlling interest in another entity our affiliation rules would make attributable to the applicant the gross revenues of that entity.[255]

V. PROCEDURAL MATTERS

89. *Paperwork Reduction Analysis*. This *Report and Order* contains either a new or modified information collection. As part of its continuing effort to reduce paperwork burdens, the Commission invites the general public and the Office of Management and Budget (OMB) to take this opportunity to comment on revision to the information collections contained in the *Report and Order*. As required by the Paperwork Reduction Act of 1995, Pub. L. No. 104-13 public comments on the information collections contained in the *Report and Order* are due 30 days after publication of the summary of the *Report and Order* in the Federal Register. Comments on the modified and proposed information collections contained in the *Report and Order* should address: (a) whether the collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimates; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology. These comments should be submitted to Judy Boley, Federal Communications Commission, Room 1-C804, 445 12th Street, S.W., Washington, D.C. 20554, or via the Internet to jboley@fcc.gov. Furthermore, a copy of any such comments should be submitted to Virginia Huth, OMB Desk Officer, 10236 NEOB, 725 17th Street, N.W., Washington, D.C. 20503.

Regulatory Flexibility Act

90. As required by Section 604 of the Regulatory Flexibility Act ("RFA"), 5 U.S.C. § 604 (1981), we have prepared a Final Regulatory Flexibility Analysis ("FRFA") of the expected impact on small entities by the policies and rules adopted in this *Report and Order*. The FRFA is contained in Appendix B.

Further Information

91. For further information regarding this *Report and Order*, contact Catherine Fox, Michael Pollak, Shellie Blakeney or Paul Moon, Wireless Telecommunications Bureau, Public Safety and Private Wireless Division, Policy and Rules Branch, at (202) 418-0680 (voice), (202) 418-7233 (TTY); or Nese Guendelsberger of the Auctions and Industry Analysis Division, Wireless Telecommunications Bureau at (202) 418-0660 (voice), (202) 418-7233 (TTY).

VI. ORDERING CLAUSES

92. Accordingly, IT IS ORDERED that the actions of the Commission herein ARE TAKEN pursuant to Sections 4(i), 257, 303, 309(j) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 257, 303, 309(j).

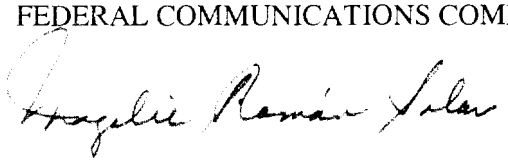
93. Accordingly, IT IS ORDERED that Parts 1, 2, 87 and 101 of the Commission's Rules ARE AMENDED as set forth in Appendix C, effective sixty days after their publication in the Federal Register, following OMB approval. If OMB approval is not issued within sixty days after publication of

[255] *See* 47 C.F.R §1.2110(b)(4). *See also* In re Application of Baker Creek Communications, L.P. for Authority to Construct and Operate Local Multipoint Distribution Services in Multiple Basic Trading Areas, *Memorandum Opinion and Order*, 13 FCC Rcd 18709 (rel. Sept. 22, 1998).

a summary of this *Report and Order* in the Federal Register, a notice shall be published in the Federal Register specifying a revised effective date.

94. IT IS FURTHER ORDERED pursuant to Section 4(i) of the Communications Act of 1934, as amended, 47 U.S.C. § 154(i), that the Commission's Consumer Information Bureau, Reference Information Center, SHALL SEND a copy of this *Report and Order*, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION



Magalie Roman Salas
Secretary